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RESEARCH MEMORANDUM

WIND-TUNNEL INVESTIGATION OF THE EFFECT OF ASPECT RATIO
AND CHORDWISE LOCATION ON EFFECTIVENESS OF
SPOILER-SLOT-DEFLECTOR CONTROLS ON THIN
UNTAPERED WINGS AT TRANSONIC SPEEDS

By Alexander D. Hammond and Jarrett K. Huffman

Langley Aeronautical Laboratory
Langley Field, Va.

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NTP July 1959 - June
1960

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September 19, 1957

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RESEARCH MEMORANDUM

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UNTAPERED WINGS AT TRANSONIC SPEEDS

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SUMMARY

A wind-tunnel investigation has been made in the Langley high-speed 7- by 10-foot tunnel by use of the transonic-bump technique to study the effectiveness of spoiler-slot-deflector controls on four unswept untapered wings. The wings had NACA 65A004 airfoil sections. Full-span spoiler-slot-deflectors, projected to 7.5 percent wing chord along the 30-, 50-, 70-, and 90-percent-wing-chord lines, were tested on wings of aspect ratio 1 to 4 at Mach numbers from 0.60 to 1.10. The data are presented without discussion.

INTRODUCTION

The design of spoiler-slot-deflector controls at transonic speeds is hampered by the lack of a satisfactory theoretical approach and the lack of systematic data on the effects of wing aspect ratio and the chordwise location of the control. The effect of these variables on the lateral control characteristics of plain spoiler-type lateral controls is reported in reference 1. There are a number of published investigations of the lateral control characteristics of spoiler-slot-deflector configurations (for example, see refs. 2 to 6) and the data of these investigations have shown certain advantages of the spoiler-slot-deflector combination over the plain spoiler, such as the good control effectiveness at high angles of attack of the spoiler-slot-deflector control.

The present paper presents the results of a wind-tunnel investigation to determine the control effectiveness on four small-scale rectangular semispan wings equipped with spoiler-slot-deflector controls at transonic speeds. The variables investigated were wing aspect ratio (aspect ratios from 1 to 4), control chordwise location (control located from 0.30 to

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0.90 wing chord) and ratio of deflector projection to spoiler projection (projection ratios of 0.50, 0.75, and 1.00). The transonic speeds were obtained by using the transonic-bump technique in the Langley high-speed 7- by 10-foot wind tunnel.

In order to expedite the publication of the results of this investigation, no discussion of the data is presented. All of the data are presented in tabular form and, in addition, some data showing significant trends are presented in graphic form.

COEFFICIENTS AND SYMBOLS

The data are presented about the model wind axes with the origin on the wing root chord line of a longitudinal position corresponding to the quarter-chord of the mean aerodynamic chord.

$$C_L \quad \text{lift coefficient, } \frac{\text{Twice semispan lift}}{qS}$$
$$C_D \quad \text{drag coefficient, } \frac{\text{Twice semispan drag}}{qS}$$
$$C_m = \frac{\text{pitching-moment coefficient about } 0.25c, \text{ Twice semispan pitching moment}}{qSc}$$
$$C_l \quad \text{rolling-moment coefficient, } \frac{\text{Semispan rolling moment}}{qSb}$$
$$C_n \quad \text{yawing-moment coefficient,} \quad \frac{\text{Semispan yawing moment}}{qSb}$$

b wing span, ft

c wing chord, ft

x_s distance of spoiler trailing edge (in the unprojected position) from the wing leading edge, ft

S wing area, sq ft

A wing aspect ratio, b^2/S

q	free-stream dynamic pressure, $\frac{1}{2} \rho V^2$, lb/sq ft
V	free-stream velocity, ft/sec
ρ	free-stream density, slugs/cu ft
R	Reynolds number based on wing chord
M	free-stream Mach number
M_l	local Mach number
α	angle of attack, deg
δ_s	spoiler projection measured from wing surface (negative when projected above surface of wing), fraction of wing chord
δ_d	deflector projection measured from wing surface (negative when projected below surface of wing), fraction of wing chord
δ_d/δ_s	deflector projection to spoiler projection ratio
$\Delta C_L, \Delta C_m, \Delta C_D$	change in coefficient due to control deflection, difference between wing with control and plain wing
$(\Delta C_N)_{cp}$	location of longitudinal center of pressure of incremental normal-force coefficient due to control projection

MODELS

The geometric characteristics of the models used in the investigation are given in figure 1. The models were machined from solid steel to an NACA 65A004 airfoil section. The basic models had no twist or camber and had a taper ratio of 1. The aspect ratio was varied by cutting the wings at the appropriate spanwise station normal to the chord plane.

The flap-type spoiler and deflector controls (fig. 1) extended from the wing root to the wing tip and had a chord of 10 percent of the wing chord. The various locations of the trailing edge of the slot of the spoiler-slot-deflector controls were at the 30-, 50-, 70-, and 90-percent-chordwise stations on the wings. The steel spoiler was hinged to the upper wing surface at the leading edge of the slot. The steel deflector was hinged to the lower wing surface at the trailing edge of the slot. The spoiler projection (δ_s) was 0.075c for all the wings and the deflector

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projection was varied to give ratios of deflector projection to spoiler projection of 0.50, 0.75, or 1.00.

TESTS

The tests were made by using the transonic-bump technique in the Langley high-speed 7- by 10-foot tunnel. The models were attached to a five-component electrical strain-gage balance beneath the bump surface. The tests were made over a Mach number range from 0.60 to 1.10 at Reynolds numbers varying from approximately 1.0×10^6 at $M = 0.60$ to approximately 1.3×10^6 at $M = 1.10$. The variation of the local Mach number over the bump in the vicinity of the model location for several Mach numbers is shown in figure 2.

The test angles of attack varied generally from -3° to 20° whenever the loads encountered did not exceed the design limit of the balance. The aspect ratio of the models was varied from 1 to 4.

CORRECTIONS

The data have not been corrected for jet-boundary effects or blocking since the models were sufficiently small with respect to tunnel boundaries as to make the corrections negligible. The roll and yaw data presented represent the rolling- and yawing-moment coefficients resulting from deflections of the control on one wing. Since no reflection-plane corrections have been applied to the data, they represent symmetrically deflected controls and should be reduced if applied to antisymmetric deflection. The magnitude of the corrections (reflection plane) at $M = 0$ obtained from references 7 and 8 are given in figure 3. The variation of the reflection-plane correction with Mach number has not been established in the transonic speed range but does decrease to 0 at supersonic speeds.

RESULTS

The force and moment data obtained in this investigation are presented in tables I to IV. A graphical presentation of some of the data is shown in figures 4 to 7 to give a pictorial description of the typical variation of ΔC_L , ΔC_D , ΔC_m , and $(\Delta C_N)_{cp}$ with the several test parameters. The variation of ΔC_L , ΔC_D , ΔC_m , and $(\Delta C_N)_{cp}$ resulting from projection of the spoiler-slot-deflector control at various chordwise positions is

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plotted against aspect ratio in figure 4 against angle of attack in figure 5, and against Mach number in figure 6 for a ratio of deflector projection to spoiler projection (δ_d/δ_s) of 0.75. The variations of ΔC_L , ΔC_D , ΔC_m , and $(\Delta C_N)_{cp}$ with angle of attack for the spoiler-slot-deflector configurations located at the 70-percent-chordwise position on the aspect-ratio-4 model are presented in figure 7 for control projection ratios (δ_d/δ_s) of 0.50, 0.75, and 1.00 at several Mach numbers.

Langley Aeronautical Laboratory,
National Advisory Committee for Aeronautics,
Langley Field, Va., June 18, 1957.

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING

(a) Plain Wing

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.1188	.0043	-.0224	.0206	.0048	-3	-.0990	.0150	-.0222	.0120	.0070
-2	-.0763	.0043	-.0189	.0155	.0048	-2	-.0841	.0150	-.0121	.0060	.0084
-1	-.0424	.0086	-.0036	.0103	.0024	-1	-.0495	.0150	-.0083	.0000	.0070
0	-.0424	.0086	-.0013	.0052	.0000	0	-.0049	.0150	-.0057	-.0030	.0056
1	-.0169	.0129	-.0220	.0000	.0024	1	.0149	.0150	.0017	-.0060	.0070
2	.0085	.0215	-.0047	-.0052	.0024	2	.0495	.0175	.0082	-.0090	.0070
3	.0509	.0215	-.0083	-.0103	.0024	3	.0891	.0226	.0163	-.0151	.0084
5	.1272	.0387	.0007	-.0155	.0048	5	.1732	.0326	.0199	-.0241	.0098
7	.1951	.0430	.0049	-.0258	.0072	7	.2474	.0526	.0201	-.0331	.0126
10	.3138	.0816	.0117	-.0413	.0120	10	.3959	.0952	.0077	-.0542	.0182
20	.8057	.3607	-.0873	-.1083	.0505	20	.9106	.3783	-.0829	-.1234	.0561
M = 0.80						M = 1.00					
-3	-.0936	.0030	-.0257	.0071	.0050	-3	-.0950	.0264	-.0158	.0087	.0054
-2	-.0585	.0030	-.0181	.0036	.0050	-2	-.0665	.0240	-.0071	.0058	.0040
-1	-.0293	.0059	-.0156	.0000	.0033	-1	-.0237	.0192	-.0020	.0000	.0040
0	-.0058	.0030	-.0165	-.0036	.0033	0	.0000	.0216	.0000	-.0029	.0040
1	.0058	.0118	-.0064	-.0036	.0033	1	.0427	.0264	.0051	-.0087	.0013
2	.0527	.0148	-.0051	-.0107	.0033	2	.0807	.0264	.0128	-.0116	.0040
3	.0702	.0178	.0036	-.0142	.0050	3	.1187	.0313	.0138	-.0173	.0054
5	.1521	.0296	.0057	-.0249	.0050	5	.2042	.0505	.0131	-.0289	.0081
7	.2340	.0444	.0109	-.0356	.0083	7	.3086	.0721	.0049	-.0404	.0108
10	.3686	.0889	.0117	-.0534	.0166	10	.4510	.1226	-.0074	-.0606	.0175
20	.8484	.3555	-.1004	-.1103	.0514	20	.9733	.4110	-.0991	-.1299	.0579
M = 0.85						M = 1.05					
-3	-.1095	.0083	-.0247	.0067	.0047	-3	-.0997	.0275	-.0127	.0083	.0013
-2	-.0657	.0056	-.0188	.0033	.0047	-2	-.0680	.0275	-.0069	.0055	.0013
-1	-.0383	.0083	-.0134	-.0033	.0047	-1	-.0227	.0252	-.0043	.0000	.0013
0	-.0109	.0083	-.0080	-.0067	.0047	0	.0136	.0298	-.0034	-.0055	.0000
1	.0164	.0111	-.0056	-.0133	.0047	1	.0453	.0298	.0051	-.0110	.0000
2	.0493	.0139	-.0017	-.0167	.0047	2	.0907	.0367	.0087	-.0138	.0000
3	.0822	.0167	.0053	-.0200	.0047	3	.1315	.0413	.0085	-.0193	.0013
5	.1643	.0277	.0121	-.0266	.0062	5	.2040	.0551	.0114	-.0276	.0039
7	.2464	.0416	.0142	-.0366	.0109	7	.2992	.0803	.0020	-.0414	.0077
10	.3834	.0832	.0092	-.0566	.0171	10	.4442	.1285	-.0148	-.0579	.0141
20	.8489	.3521	-.0993	-.1166	.0513	20	.9519	.4085	-.1000	-.1268	.0553
M = 0.90						M = 1.10					
-3	-.1291	.0131	-.0182	.0063	.0044	-3	-.1034	.0327	-.0112	.0079	.0012
-2	-.0775	.0131	-.0195	.0000	.0015	-2	-.0603	.0284	-.0064	.0052	.0000
-1	-.0516	.0078	-.0088	-.0031	.0015	-1	-.0215	.0284	-.0029	-.0026	.0000
0	-.0207	.0105	-.0020	-.0094	.0000	0	.0129	.0284	.0016	-.0052	.0000
1	.0155	.0131	-.0040	-.0126	.0015	1	.0517	.0349	.0038	-.0079	.0012
2	.0516	.0131	.0014	-.0157	.0015	2	.0862	.0349	.0059	-.0131	.0012
3	.0775	.0209	.0093	-.0188	.0029	3	.1292	.0393	.0094	-.0183	.0012
5	.1549	.0288	.0186	-.0314	.0044	5	.2068	.0567	.0075	-.0288	.0024
7	.2479	.0471	.0165	-.0408	.0088	7	.2929	.0763	.0009	-.0393	.0073
10	.3873	.0915	.0089	-.0597	.0132	10	.4394	.1221	-.0147	-.0603	.0134
20	.8469	.3555	-.0922	-.1193	.0483	20	.9261	.3991	-.1023	-.1231	.0513

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(b) $x_s/c = 0.30$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.2797	.1674	-.0453	.0374	.0313	-3	-.3268	.2382	-.0517	.0399	.0351
-2	-.2585	.1674	-.0453	.0348	.0300	-2	-.3070	.2319	-.0432	.0369	.0337
-1	-.2288	.1738	-.0392	.0309	.0276	-1	-.2847	.2344	-.0400	.0339	.0316
0	-.1992	.1695	-.0486	.0271	.0252	0	-.2699	.2382	-.0385	.0309	.0302
1	-.1865	.1824	-.0668	.0245	.0264	1	-.2451	.2344	-.0477	.0279	.0288
2	-.1441	.1867	-.0687	.0193	.0240	2	-.2129	.2319	-.0485	.0233	.0281
3	-.1229	.1974	-.0620	.0155	.0252	3	-.1832	.2319	-.0529	.0196	.0274
5	-.0636	.2124	-.0599	.0064	.0264	5	-.1213	.2344	-.0538	.0105	.0267
7	-.0127	.2253	-.0641	-.0039	.0252	7	-.0421	.2319	-.0618	.0008	.0260
10	.0763	.2446	-.0638	-.0193	.0276	10	.0767	.2407	-.0632	-.0181	.0274
20	.4280	.3841	-.0634	-.0670	.0529	20	.5720	.3824	-.1145	-.0776	.0548
M = 0.80						M = 1.00					
-3	-.3332	.1998	-.0466	.0418	.0348	-3	-.2352	.2442	-.0770	.0275	.0337
-2	-.3186	.1983	-.0511	.0391	.0332	-2	-.2043	.2406	-.0692	.0224	.0323
-1	-.2981	.1998	-.0382	.0364	.0307	-1	-.1758	.2430	-.0640	.0181	.0303
0	-.2601	.1998	-.0429	.0329	.0290	0	-.1402	.2466	-.0652	.0130	.0290
1	-.2484	.2072	-.0483	.0293	.0282	1	-.1045	.2466	-.0773	.0079	.0243
2	-.2163	.2027	-.0614	.0258	.0274	2	-.0808	.2466	-.0777	.0036	.0256
3	-.1783	.2057	-.0538	.0213	.0282	3	-.0570	.2466	-.0814	.0000	.0270
5	-.1140	.2116	-.0457	.0124	.0282	5	.0024	.2490	-.0731	-.0065	.0276
7	-.0497	.2131	-.0588	.0036	.0274	7	.0618	.2502	-.0834	-.0159	.0283
10	.0555	.2249	-.0586	-.0124	.0274	10	.1805	.2610	-.0803	-.0325	.0310
20	.4501	.3507	-.0752	-.0631	.0489	20	.6438	.4113	-.1392	-.0896	.0593
M = 0.85						M = 1.05					
-3	-.3393	.2120	-.0457	.0441	.0349	-3	-.2143	.2274	-.0755	.0243	.0091
-2	-.3311	.2106	-.0494	.0416	.0326	-2	-.1756	.2309	-.0670	.0194	.0129
-1	-.3065	.2092	-.0404	.0391	.0310	-1	-.1414	.2309	-.0683	.0139	.0084
0	-.2846	.2106	-.0352	.0350	.0295	0	-.1072	.2332	-.0682	.0090	.0019
1	-.2682	.2106	-.0479	.0308	.0287	1	-.0889	.2309	-.0834	.0035	.0129
2	-.2244	.2106	-.0483	.0275	.0279	2	-.0547	.2367	-.0853	-.0007	.0013
3	-.1888	.2106	-.0430	.0225	.0279	3	-.0319	.2425	-.0870	-.0118	.0013
5	-.1286	.2134	-.0453	.0133	.0272	5	.0365	.2482	-.0885	-.0166	.0032
7	-.0575	.2134	-.0580	.0042	.0264	7	.1163	.2540	-.0857	-.0250	.0103
10	.0520	.2217	-.0599	-.0133	.0272	10	.2257	.2690	-.0954	-.0416	.0129
20	.4761	.3533	-.0808	-.0657	.0505	20	.6795	.4387	-.1550	-.0978	.0472
M = 0.90						M = 1.10					
-3	-.3385	.2185	-.0470	.0432	.0344	-3	-.2134	.1932	-.0696	.0223	-.0147
-2	-.3281	.2158	-.0491	.0401	.0330	-2	-.1724	.1964	-.0673	.0177	-.0153
-1	-.3075	.2158	-.0407	.0377	.0308	-1	-.1315	.1986	-.0614	.0118	-.0196
0	-.2894	.2198	-.0353	.0338	.0293	0	-.1056	.2019	-.0616	.0072	-.0220
1	-.2687	.2224	-.0451	.0306	.0286	1	-.1056	.2019	-.0878	.0026	-.0226
2	-.2300	.2132	-.0535	.0275	.0278	2	-.0409	.2128	-.0689	-.0033	-.0220
3	-.2015	.2158	-.0493	.0228	.0278	3	-.0259	.2150	-.0723	-.0085	-.0196
5	-.1395	.2224	-.0453	.0141	.0271	5	.0453	.2292	-.0844	-.0190	-.0183
7	-.0698	.2198	-.0537	.0039	.0257	7	.1315	.2346	-.0777	-.0301	-.0147
10	.0491	.2250	-.0573	-.0134	.0271	10	.2328	.2510	-.0851	-.0446	-.0079
20	.5012	.3624	-.0952	-.0699	.0506	20	.6487	.4365	-.1433	-.1003	.0293

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(c) $x_S/c = 0.50$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4371	.1934	-.0130	.0477	.0193	-3	-.4263	.2309	-.0119	.0452	.0197
-2	-.4158	.1934	-.0071	.0439	.0168	-2	-.4089	.2259	.0002	.0415	.0176
-1	-.3819	.1805	-.0046	.0413	.0156	-1	-.3891	.2234	.0026	.0399	.0162
0	-.3565	.1719	-.0189	.0387	.0156	0	-.3668	.2208	.0030	.0362	.0155
1	-.3565	.1934	-.0161	.0348	.0156	1	-.3420	.2158	.0083	.0332	.0155
2	-.3182	.1719	-.0110	.0323	.0144	2	-.3024	.2133	.0078	.0279	.0148
3	-.2928	.1934	-.0065	.0271	.0144	3	-.2602	.2008	.0056	.0241	.0141
5	-.2291	.1934	-.0064	.0181	.0144	5	-.1983	.2008	.0207	.0151	.0141
7	-.1273	.1934	-.0099	.0077	.0156	7	-.1115	.1982	.0182	.0053	.0141
10	-.0170	.2019	-.0105	-.0103	.0156	10	.0124	.1958	.0161	-.0121	.0148
20	.3607	.3523	-.0353	-.0606	.0349	20	.4734	.3338	-.0593	-.0678	.0387
M = 0.80						M = 1.00					
-3	-.4596	.2134	-.0070	.0525	.0191	-3	-.3211	.2433	-.0563	.0289	.0189
-2	-.4538	.2105	.0022	.0507	.0183	-2	-.2854	.2408	-.0497	.0246	.0169
-1	-.4245	.2075	.0087	.0481	.0158	-1	-.2736	.2408	-.0436	.0224	.0162
0	-.4099	.2075	.0124	.0445	.0149	0	-.2260	.2408	-.0426	.0166	.0155
1	-.3835	.2075	.0066	.0401	.0149	1	-.2117	.2360	-.0379	.0145	.0155
2	-.3542	.2016	.0114	.0374	.0141	2	-.1713	.2288	-.0410	.0087	.0155
3	-.3132	.1986	.0142	.0312	.0133	3	-.1308	.2288	-.0435	.0036	.0155
5	-.2400	.1927	.0187	.0214	.0125	5	-.0595	.2288	-.0368	-.0051	.0148
7	-.1464	.1838	.0102	.0107	.0133	7	.0119	.2240	-.0331	-.0145	.0155
10	-.0029	.1867	.0090	-.0080	.0149	10	.1071	.2240	-.0181	-.0253	.0189
20	.3952	.3231	-.0410	-.0596	.0340	20	.5471	.3854	-.0817	-.0781	.0452
M = 0.85						M = 1.05					
-3	-.4658	.2192	.0004	.0517	.0583	-3	-.2902	.2296	-.0627	.0241	.0161
-2	-.4521	.2220	.0076	.0492	.0567	-2	-.2585	.2296	-.0539	.0200	.0148
-1	-.4357	.2081	.0178	.0467	.0171	-1	-.2267	.2227	-.0552	.0165	.0141
0	-.4138	.2081	.0154	.0433	.0163	0	-.1972	.2227	-.0490	.0117	.0129
1	-.3836	.2025	.0107	.0392	.0155	1	-.1700	.2250	-.0524	.0083	.0129
2	-.3562	.1942	.0206	.0358	.0140	2	-.1338	.2227	-.0509	.0034	.0122
3	-.3151	.1942	.0172	.0308	.0140	3	-.0907	.2181	-.0520	-.0007	.0122
5	-.2384	.1859	.0185	.0208	.0140	5	-.0295	.2181	-.0387	-.0097	.0129
7	-.1507	.1803	.0219	.0100	.0140	7	.0453	.2181	-.0337	-.0193	.0148
10	.0000	.1803	.0190	-.0083	.0148	10	.1587	.2250	-.0330	-.0310	.0174
20	.4110	.3191	-.0434	-.0608	.0350	20	.6121	.4017	-.1083	-.0862	.0469
M = 0.90						M = 1.10					
-3	-.4530	.2228	-.0020	.0496	.0191	-3	-.2848	.2184	-.0557	.0223	.0141
-2	-.4401	.2228	.0105	.0472	.0176	-2	-.2546	.2163	-.0492	.0184	.0129
-1	-.4194	.2176	.0130	.0449	.0169	-1	-.2157	.2097	-.0568	.0144	.0122
0	-.4039	.2123	.0156	.0417	.0154	0	-.1942	.2075	-.0510	.0112	.0116
1	-.3754	.2097	.0205	.0394	.0154	1	-.1597	.2097	-.0485	.0066	.0110
2	-.3417	.2045	.0184	.0346	.0147	2	-.1294	.2075	-.0437	.0020	.0110
3	-.3107	.1966	.0185	.0299	.0140	3	-.0841	.2053	-.0499	-.0020	.0110
5	-.2252	.1887	.0267	.0197	.0132	5	-.0216	.2075	-.0359	-.0105	.0116
7	-.1450	.1835	.0195	.0094	.0132	7	.0539	.2053	-.0348	-.0197	.0129
10	.0000	.1835	.0202	-.0094	.0147	10	.1575	.2141	-.0294	-.0315	.0159
20	.4401	.3277	-.0481	-.0630	.0360	20	.5933	.3932	-.1024	-.0840	-.0795

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(d) $x_S/c = 0.70$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4071	.1782	.0683	.0516	.0084	-3	-.3890	.2007	.0443	.0505	.0141
-2	-.3816	.1653	.0670	.0490	.0072	-2	-.3568	.1932	.0527	.0467	.0141
-1	-.3435	.1546	.0724	.0438	.0060	-1	-.3271	.1882	.0535	.0429	.0126
0	-.3180	.1395	.0558	.0426	.0060	0	-.2899	.1857	.0621	.0384	.0119
1	-.2968	.1782	.0437	.0374	.0060	1	-.2552	.1781	.0575	.0347	.0112
2	-.2544	.1782	.0478	.0335	.0060	2	-.2230	.1756	.0646	.0301	.0119
3	-.2120	.1804	.0564	.0297	.0060	3	-.1784	.1731	.0623	.0249	.0112
5	-.1484	.1825	.0591	.0193	.0060	5	-.0991	.1756	.0708	.0151	.0119
7	-.0466	.1847	.0594	.0103	.0072	7	-.0124	.1756	.0677	.0060	.0126
10	.0424	.2125	.0575	-.0064	.0096	10	.1115	.1907	.0716	-.0098	.0155
20	.5725	.4401	-.0144	-.0735	.0373	20	.6318	.3889	-.0188	-.0791	.0450
M = 0.80						M = 1.00					
-3	-.4389	.1926	.0573	.0560	.0116	-3	-.3115	.2047	.0107	.0398	.0142
-2	-.4037	.1837	.0698	.0516	.0100	-2	-.2782	.2011	.0194	.0362	.0128
-1	-.3745	.1778	.0821	.0472	.0091	-1	-.2497	.1926	.0166	.0325	.0121
0	-.3511	.1763	.0690	.0436	.0091	0	-.2140	.1902	.0183	.0275	.0115
1	-.3189	.1733	.0748	.0409	.0083	1	-.1831	.2468	.0228	.0239	.0115
2	-.2779	.1674	.0736	.0356	.0083	2	-.1427	.1842	.0274	.0188	.0115
3	-.2399	.1644	.0732	.0302	.0083	3	-.0951	.1830	.0213	.0137	.0101
5	-.1638	.1629	.0758	.0205	.0075	5	-.0285	.1842	.0397	.0058	.0128
7	-.0702	.1644	.0820	.0098	.0091	7	.0595	.1866	.0374	-.0036	.0135
10	.0614	.1852	.0710	-.0071	.0108	10	.1902	.2131	.0397	-.0195	.0182
20	.5793	.3837	-.0200	-.0730	.0390	20	.7253	.4334	-.0445	-.0904	.0506
M = 0.85						M = 1.05					
-3	-.4381	.1941	.0621	.0550	.0132	-3	-.3105	.1928	-.0011	.0386	.0116
-2	-.4108	.1886	.0766	.0516	.0116	-2	-.2720	.1859	.0011	.0338	.0096
-1	-.3751	.1858	.0831	.0475	.0109	-1	-.2357	.1825	.0071	.0283	.0096
0	-.3478	.1775	.0717	.0433	.0101	0	-.2040	.1779	.0117	.0262	.0084
1	-.3067	.1761	.0851	.0400	.0101	1	-.1700	.1756	.0087	.0214	.0077
2	-.2738	.1636	.0846	.0358	.0101	2	-.1315	.1744	.0187	.0172	.0084
3	-.2382	.1664	.0764	.0316	.0093	3	-.0907	.1721	.0184	.0138	.0090
5	-.1561	.1622	.0791	.0217	.0101	5	-.0113	.1767	.0312	.0041	.0103
7	-.0602	.1650	.0819	.0108	.0109	7	.0816	.1859	.0267	-.0062	.0129
10	.0712	.1802	.0781	-.0058	.0132	10	.2221	.2146	.0184	-.0241	.0167
20	.5805	.3743	-.0191	-.0724	.0388	20	.7139	.4338	-.0431	-.0875	.0456
M = 0.90						M = 1.10					
-3	-.4267	.1964	.0585	.0551	.0147	-3	-.3127	.1802	.0051	.0354	.0128
-2	-.3931	.1912	.0710	.0511	.0125	-2	-.2588	.1791	-.0001	.0295	.0092
-1	-.3621	.1859	.0768	.0464	.0117	-1	-.2265	.1747	.0061	.0262	.0080
0	-.3336	.1833	.0798	.0425	.0117	0	-.1898	.1692	.0065	.0216	.0092
1	-.2974	.1768	.0807	.0393	.0110	1	-.1574	.1671	.0115	.0171	.0092
2	-.2586	.1715	.0812	.0354	.0110	2	-.1165	.1660	.0168	.0118	.0116
3	-.2198	.1663	.0766	.0315	.0110	3	-.0669	.1638	.0116	.0085	.0110
5	-.1422	.1663	.0839	.0220	.0110	5	-.0043	.1671	.0186	.0000	.0104
7	-.0466	.1663	.0825	.0102	.0117	7	.0863	.1780	.0215	-.0111	.0135
10	.0802	.1859	.0807	-.0071	.0132	10	.2157	.2075	.0145	-.0275	.0165
20	.5949	.3732	-.0162	-.0747	.0418	20	.6901	.4171	-.0458	-.0879	.0416

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(e) $x_S/c = 0.70$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4660	.1780	.0440	.0644	.0144	-3	-.4482	.2269	.0443	.0557	.0155
-2	-.4321	.1780	.0515	.0618	.0120	-2	-.4209	.2206	.0572	.0527	.0140
-1	-.4194	.1780	.0594	.0580	.0108	-1	-.3838	.2144	.0642	.0482	.0119
0	-.4024	.1737	.0508	.0567	.0096	0	-.3590	.2081	.0572	.0437	.0119
1	-.3813	.1802	.0447	.0515	.0108	1	-.3293	.2043	.0662	.0399	.0119
2	-.3559	.1780	.0518	.0490	.0108	2	-.2847	.2018	.0610	.0354	.0112
3	-.3389	.1802	.0644	.0451	.0108	3	-.2476	.1956	.0613	.0309	.0112
5	-.2627	.1759	.0687	.0232	.0108	5	-.1733	.1956	.0687	.0211	.0119
7	-.1906	.1759	.0692	.0271	.0108	7	-.0867	.1956	.0764	.0128	.0119
10	-.0847	.1952	.0693	.0129	.0132	10	.0371	.2018	.0742	-.0023	.0140
20	.4024	.3775	.0154	-.0490	.0348	20	.4952	.3673	.0102	-.0617	.0358
M = 0.80						M = 1.00					
-3	-.4941	.1984	.0589	.0622	.0141	-3	-.3919	.2261	.0144	.0484	.0128
-2	-.4619	.1939	.0664	.0596	.0133	-2	-.3468	.2201	.0227	.0433	.0101
-1	-.4386	.1924	.0720	.0560	.0124	-1	-.3112	.2177	.0289	.0383	.0081
0	-.4093	.1939	.0802	.0533	.0116	0	-.2851	.2117	.0235	.0347	.0081
1	-.3947	.1939	.0807	.0489	.0116	1	-.2613	.2081	.0199	.0318	.0081
2	-.3655	.1821	.0799	.0462	.0108	2	-.2138	.2057	.0237	.0260	.0074
3	-.3216	.1791	.0805	.0418	.0100	3	-.1782	.2057	.0305	.0217	.0081
5	-.2543	.1762	.0881	.0338	.0100	5	-.0926	.2057	.0419	.0108	.0081
7	-.1754	.1717	.0898	.0240	.0100	7	-.0119	.2057	.0452	.0036	.0101
10	-.0555	.1806	.0885	.0089	.0124	10	.1069	.2237	.0524	-.0108	.0162
20	.3976	.3405	.0231	-.0489	.0307	20	.6010	.4101	-.0281	-.0722	.0404
M = 0.85						M = 1.05					
-3	-.4926	.2092	.0614	.0624	.0155	-3	-.3737	.2076	.0092	.0448	.0039
-2	-.4652	.1981	.0704	.0582	.0140	-2	-.3375	.2018	.0164	.0399	.0032
-1	-.4378	.1967	.0782	.0558	.0132	-1	-.2945	.1984	.0162	.0358	.0019
0	-.4132	.1940	.0788	.0524	.0116	0	-.2537	.1961	.0241	.0310	.0013
1	-.3886	.1912	.0833	.0491	.0116	1	-.2378	.1938	.0117	.0269	.0006
2	-.3557	.1843	.0858	.0449	.0116	2	-.1970	.1927	.0171	.0220	.0013
3	-.3202	.1815	.0875	.0399	.0109	3	-.1585	.1938	.0232	.0179	.0013
5	-.2463	.1746	.0904	.0316	.0101	5	-.0725	.1938	.0348	.0083	.0013
7	-.1642	.1732	.0943	.0216	.0101	7	.0068	.1984	.0385	-.0007	.0051
10	-.0383	.1815	.0918	.0067	.0124	10	.1359	.2213	.0443	-.0138	.0122
20	.4105	.3408	.0253	-.0508	.0303	20	.6229	.4197	-.0441	-.0758	.0366
M = 0.90						M = 1.10					
-3	-.4781	.2133	.0571	.0597	.0161	-3	-.3664	.1866	.0161	.0426	.0037
-2	-.4445	.2107	.0681	.0558	.0132	-2	-.3168	.1811	.0163	.0387	.0024
-1	-.4213	.2041	.0686	.0527	.0125	-1	-.2866	.1757	.0151	.0334	.0024
0	-.3929	.1976	.0751	.0495	.0110	0	-.2371	.1757	.0189	.0295	.0012
1	-.3618	.1976	.0772	.0448	.0117	1	-.2155	.1735	.0157	.0249	.0024
2	-.3282	.1924	.0789	.0417	.0110	2	-.1724	.1757	.0241	.0203	.0012
3	-.2946	.1845	.0805	.0369	.0103	3	-.1466	.1691	.0175	.0164	.0037
5	-.2197	.1806	.0869	.0275	.0103	5	-.0668	.1746	.0357	.0085	.0073
7	-.1344	.1806	.0957	.0189	.0110	7	.0108	.1779	.0347	-.0007	.0061
10	-.0129	.1871	.0876	.0047	.0132	10	.1401	.2084	.0397	-.0151	.0110
20	.4264	-.0510	.0596	-.0527	.0315	20	.6142	.4125	-.0470	-.0734	.0306

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Continued

(f) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4243	.2256	.1979	.0490	.0156	-3	-.4215	.2448	.0744	.0483	.0232
-2	-.4074	.2192	.0752	.0465	.0144	-2	-.3843	.2385	.0835	.0452	.0211
-1	-.3819	.2170	.0857	.0439	.0120	-1	-.3471	.2259	.0836	.0407	.0204
0	-.3649	.2148	.0912	.0400	.0120	0	-.3149	.2259	.0794	.0369	.0204
1	-.3310	.2385	.0841	-.0916	.0120	1	-.2802	.2197	.0822	.0332	.0197
2	-.3098	.2342	.0932	.0361	.0120	2	-.2454	.2134	.0878	.0294	.0190
3	-.2843	.2320	.0965	.0323	.0120	3	-.2033	.2071	.0835	.0256	.0190
5	-.2291	.2277	.1043	.0245	.0120	5	-.1364	.2071	.0933	.0181	.0190
7	-.1400	.2256	.1061	.0168	.0120	7	-.0694	.2046	.1039	.0106	.0197
10	-.0467	.2428	.1054	.0052	.0156	10	.0273	.2172	.1136	-.0023	.0211
20	.2970	.3717	.0800	-.0452	.0325	20	.4091	.3578	.0598	-.0528	.0380
M = 0.80						M = 1.00					
-3	-.4099	.2327	.0652	.0481	.0166	-3	-.3877	.2626	.0530	.0463	.0236
-2	-.3835	.2283	.0732	.0454	.0166	-2	-.3568	.2577	.0640	.0427	.0223
-1	-.3542	.2238	.0813	.0418	.0149	-1	-.3187	.2517	.0702	.0376	.0209
0	-.3337	.2223	.0826	.0392	.0141	0	-.2973	.2469	.0703	.0354	.0202
1	-.3074	.2149	.0792	.0347	.0141	1	-.2545	.2457	.0718	.0311	.0202
2	-.2635	.2120	.0796	.0320	.0141	2	-.2165	.2385	.0706	.0268	.0202
3	-.2283	.2120	.0861	.0276	.0133	3	-.1879	.2324	.0698	.0231	.0202
5	-.1552	.2075	.0923	.0187	.0133	5	-.1094	.2300	.0827	.0152	.0196
7	-.0878	.2075	.1056	.0107	.0133	7	-.0357	.2300	.0817	.0072	.0216
10	.0117	.2223	.1078	-.0009	.0166	10	.0714	.0000	.1028	-.0080	.0236
20	.3191	.3409	.0736	-.0454	.0316	20	.4995	.4035	.0252	-.0644	.0439
M = 0.85						M = 1.05					
-3	-.4000	.2081	.0673	.0458	.0187	-3	-.3651	.2469	.0429	.0441	.0212
-2	-.3726	.2012	.0757	.0425	.0179	-2	-.3289	.2412	.0558	.0400	.0187
-1	-.3535	.2012	.0816	.0392	.0171	-1	-.3016	.2365	.0586	.0359	.0180
0	-.3206	.1942	.0833	.0367	.0171	0	-.2631	.2331	.0595	.0324	.0174
1	-.2850	.1942	.0857	.0325	.0163	1	-.2313	.2297	.0625	.0283	.0161
2	-.2466	.1901	.0906	.0283	.0155	2	-.0816	.2297	.0330	.0248	.0167
3	-.2083	.1859	.0872	.0242	.0155	3	-.1633	.2239	.0595	.0214	.0167
5	-.1480	.1817	.1011	.0183	.0155	5	-.0907	.2239	.0691	.0131	.0187
7	-.0795	.1845	.1091	.0100	.0163	7	-.0113	.2239	.0709	.0041	.0199
10	.0247	.2025	.1085	-.0025	.0187	10	.1111	.2423	.0757	-.0117	.0225
20	.3398	.3316	.0865	-.0467	.0334	20	.5330	.4099	.0041	-.0669	.0431
M = 0.90						M = 1.10					
-3	-.4011	.2175	.0674	.0464	.0206	-3	-.3475	.2295	.0385	.0420	.0196
-2	-.3753	.2162	.0733	.0441	.0198	-2	-.3129	.2240	.0494	.0387	.0184
-1	-.3442	.2083	.0775	.0394	.0184	-1	-.2870	.2229	.0558	.0348	.0165
0	-.3183	.2097	.0912	.0370	.0176	0	-.2525	.2185	.0589	.0315	.0153
1	-.2743	.2018	.0836	.0331	.0176	1	-.2158	.2185	.0523	.0269	.0153
2	-.2407	.1966	.0881	.0291	.0169	2	-.1856	.2131	.0572	.0230	.0159
3	-.2045	.1900	.0841	.0244	.0169	3	-.1489	.2076	.0611	.0190	.0196
5	-.1527	.1926	.1105	.0165	.0162	5	-.0734	.2076	.0645	.0112	.0184
7	-.0699	.1900	.1049	.0094	.0169	7	.0043	.2120	.0642	.0026	.0190
10	.0311	.2005	.1088	-.0031	.0198	10	.1209	.2349	.0705	-.0131	.0214
20	.3571	.3341	.0822	-.0480	.0345	20	.5309	.3999	-.0056	-.0650	.0396

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TABLE I. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-1 WING - Concluded

(g) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4617	.1630	.1423	.0528	.0240	-3	-.4432	.2119	.1307	.0535	.0281
-2	-.4194	.1587	.1465	.0490	.0216	-2	-.3937	.2056	.1348	.0489	.0260
-1	-.3855	.1587	.1528	.0451	.0204	-1	-.3565	.1993	.1406	.0452	.0239
0	-.3559	.1459	.1447	.0412	.0180	0	-.3194	.1931	.1408	.0407	.0225
1	-.3135	.1501	.1310	.0386	.0180	1	-.2823	.1893	.1342	.0361	.0211
2	-.2711	.1459	.1256	.0361	.0180	2	-.2451	.1805	.1379	.0309	.0211
3	-.2372	.1459	.1379	.0322	.0180	3	-.2055	.1830	.1389	.0271	.0204
5	-.1737	.1459	.1408	.0245	.0180	5	-.1337	.1805	.1423	.0188	.0204
7	-.0932	.1587	.1498	.0155	.0180	7	-.0347	.1868	.1400	.0075	.0218
10	.0254	.1866	.1408	.0000	.0180	10	.1238	.2081	.1233	-.0113	.0246
20	.5126	.4054	.0558	-.0696	.0445	20	.6735	.4275	.0012	-.0851	.0513
M = 0.80						M = 1.00					
-3	-.4444	.1762	.1271	.0525	.0240	-3	-.4395	.2273	.1280	.0542	.0270
-2	-.4064	.1717	.1373	.0489	.0224	-2	-.3943	.2189	.1369	.0491	.0236
-1	-.3655	.1687	.1395	.0445	.0207	-1	-.3540	.2117	.1399	.0448	.0236
0	-.3391	.1614	.1281	.0409	.0207	0	-.3183	.2093	.1414	.0412	.0236
1	-.2982	.1614	.1335	.0365	.0191	1	-.2851	.2033	.1348	.0361	.0202
2	-.2602	.1540	.1316	.0329	.0191	2	-.2470	.1997	.1397	.0318	.0202
3	-.2193	.1540	.1296	.0276	.0174	3	-.2019	.1912	.1363	.0275	.0202
5	-.1520	.1540	.1384	.0196	.0166	5	-.1283	.1972	.1426	.0181	.0195
7	-.0614	.1569	.1437	.0116	.0174	7	-.0214	.2033	.1353	.0065	.0202
10	.0848	.1836	.1371	-.0062	.0207	10	.1354	.2273	.1229	-.0137	.0243
20	.5877	.3982	.0184	-.0747	.0456	20	.6794	.4559	.0260	-.0867	.0532
M = 0.85						M = 1.05					
-3	-.4352	.1816	.1287	.0541	.0248	-3	-.4394	.2053	.1282	.0530	.0225
-2	-.4079	.1788	.1364	.0499	.0233	-2	-.3828	.1995	.1309	.0482	.0193
-1	-.3668	.1732	.1407	.0449	.0217	-1	-.3375	.1938	.1353	.0434	.0186
0	-.3285	.1677	.1303	.0416	.0210	0	-.3035	.1881	.1348	.0386	.0167
1	-.2902	.1649	.1315	.0375	.0194	1	-.2809	.1881	.1315	.0344	.0161
2	-.2436	.1594	.1345	.0316	.0194	2	-.2355	.1846	.1383	.0310	.0161
3	-.2135	.1580	.1301	.0275	.0179	3	-.2016	.1823	.1322	.0262	.0161
5	-.1396	.1580	.1394	.0200	.0179	5	-.1065	.1823	.1416	.0165	.0154
7	-.0520	.1649	.1442	.0092	.0179	7	-.0023	.1881	.1298	.0041	.0161
10	.0985	.1857	.1246	-.0083	.0210	10	.1427	.2236	.1199	-.0138	.0199
20	.6186	.4075	.0136	-.0774	.0481	20	.6704	.4541	.0305	-.0847	.0469
M = 0.90						M = 1.10					
-3	-.4368	.1937	.1268	.0534	.0257	-3	-.4289	.1932	.1295	.0511	.0232
-2	-.3980	.1858	.1335	.0487	.0242	-2	-.3685	.1866	.1269	.0446	.0202
-1	-.3644	.1819	.1317	.0448	.0227	-1	-.3427	.1811	.1305	.0413	.0202
0	-.3205	.1754	.1387	.0401	.0213	0	-.3104	.1757	.1264	.0374	.0189
1	-.2817	.1701	.1297	.0362	.0205	1	-.2716	.1735	.1334	.0341	.0202
2	-.2429	.1662	.1300	.0314	.0205	2	-.2241	.1735	.1317	.0295	.0153
3	-.2042	.1623	.1306	.0275	.0198	3	-.1811	.1702	.1262	.0243	.0134
5	-.1318	.1688	.1477	.0196	.0198	5	-.0884	.1691	.1328	.0131	.0165
7	-.0491	.1701	.1429	.0086	.0198	7	.0086	.1790	.1220	.0020	.0159
10	.1137	.1950	.1254	-.0102	.0235	10	.1530	.2117	.1116	-.0157	.0171
20	.6306	.4109	.0098	-.0786	.0498	20	.6530	.4485	.0241	-.0852	.0367

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING

(a) Plain Wing

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.1689	.0167	.0009	.0200	.0018	-3	-.2045	.0181	-.0179	.0246	.0034
-2	-.1154	.0167	.0012	.0138	.0018	-2	-.1356	.0108	-.0152	.0159	.0027
-1	-.0783	.0125	.0024	.0088	.0012	-1	-.0713	.0084	-.0081	.0080	.0024
0	-.0206	.0083	.0052	.0038	.0012	0	.0000	.0096	-.0027	.0014	.0020
1	.0330	.0167	.0032	-.0025	.0012	1	.0595	.0084	.0071	-.0065	.0024
2	.0700	.0167	.0112	-.0088	.0012	2	.1189	.0120	.0148	-.0130	.0027
3	.1319	.0209	.0187	-.0150	.0012	3	.1903	.0181	.0162	-.0217	.0037
5	.2225	.0292	.0247	-.0276	.0029	5	.3044	.0349	.0152	-.0362	.0061
7	.3338	.0522	.0309	-.0413	.0058	7	.4519	.0662	-.0037	-.0542	.0111
10	.5068	.1022	.0241	-.0639	.0129	10	.6136	.1204	-.0193	-.0767	.0189
20	.7623	.3213	-.0890	-.0752	.0438	20	.9871	.3817	-.1308	-.1229	.0543
M = 0.80						M = 1.00					
-3	-.1937	.0142	-.0087	.0222	.0020	-3	-.2254	.0254	.0031	.0277	.0039
-2	-.1348	.0128	-.0055	.0154	.0020	-2	-.1548	.0196	.0013	.0187	.0029
-1	-.0730	.0085	-.0006	.0085	.0016	-1	-.0819	.0138	-.0010	.0104	.0026
0	-.0140	.0099	.0035	.0026	.0008	0	-.0068	.0138	.0004	.0014	.0023
1	.0393	.0114	.0098	-.0034	.0020	1	.0706	.0184	-.0011	-.0069	.0023
2	.0870	.0128	.0159	-.0102	.0016	2	.1366	.0184	-.0018	-.0152	.0032
3	.1404	.0156	.0228	-.0171	.0024	3	.2163	.0254	-.0027	-.0242	.0045
5	.2527	.0284	.0339	-.0299	.0044	5	.3301	.0461	-.0062	-.0381	.0074
7	.3846	.0554	.0364	-.0461	.0076	7	.4553	.0749	-.0223	-.0554	.0116
10	.5615	.1052	.0221	-.0700	.0159	10	.6488	.1325	-.0515	-.0796	.0200
20	.7693	.3141	-.0874	-.0973	.0414	20	1.1109	.4207	-.1206	-.1419	.0604
M = 0.85						M = 1.05					
-3	-.1968	.0146	-.0116	.0239	.0026	-3	-.2179	.0287	.0085	.0265	.0034
-2	-.1286	.0120	-.0067	.0160	.0022	-2	-.1416	.0221	.0027	.0172	.0025
-1	-.0656	.0106	-.0019	.0088	.0019	-1	-.0763	.0177	.0015	.0099	.0019
0	-.0131	.0106	.0033	.0024	.0019	0	.0000	.0165	-.0006	.0007	.0019
1	.0394	.0106	.0085	-.0032	.0019	1	.0741	.0188	-.0028	-.0073	.0015
2	.1050	.0120	.0170	-.0096	.0019	2	.1416	.0232	-.0051	-.0152	.0028
3	.1312	.0186	.0331	-.0176	.0026	3	.2070	.0298	-.0082	-.0225	.0040
5	.2755	.0319	.0357	-.0319	.0045	5	.3269	.0485	-.0148	-.0378	.0065
7	.4120	.0584	.0318	-.0495	.0082	7	.4467	.0761	-.0290	-.0530	.0102
10	.5773	.1076	.0147	-.0718	.0160	10	.6428	.1346	-.0599	-.0775	.0188
20	.7977	.3241	-.0977	-.1005	.0428	20	1.1549	.4413	-.1530	-.1471	.0624
M = 0.90						M = 1.10					
-3	-.1939	.0126	-.0188	.0227	.0035	-3	-.2051	.0265	.0094	.0242	.0024
-2	-.1292	.0101	-.0156	.0151	.0028	-2	-.1423	.0212	.0059	.0165	.0021
-1	-.0621	.0076	-.0095	.0076	.0021	-1	-.0670	.0191	.0010	.0083	.0015
0	-.0075	.0076	-.0044	.0008	.0018	0	.0000	.0159	.0006	.0000	.0012
1	.0497	.0088	.0043	-.0053	.0021	1	.0732	.0180	-.0032	-.0076	.0015
2	.1044	.0101	.0127	-.0121	.0025	2	.1360	.0223	-.0073	-.0146	.0024
3	.1740	.0164	.0231	-.0204	.0035	3	.2093	.0297	-.0111	-.0229	.0036
5	.2908	.0315	.0249	-.0340	.0053	5	.3244	.0477	-.0174	-.0369	.0062
7	.4275	.0591	.0165	-.0521	.0095	7	.4353	.0742	-.0295	-.0509	.0098
10	.5841	.1133	.0001	.1527	.0169	10	.6173	.1271	-.0592	-.0732	.0172
20	.8576	.3423	-.1154	-.1081	.0465	20	1.1301	.4312	-.1572	-.1413	.0596

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(b) $x_S/c = 0.30$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.3699	.1664	-.2561	.0925	.0256	-3	-.4264	.2435	-.0685	.0526	.0336
-2	-.3616	.1664	-.2530	.0875	.0256	-2	-.4027	.2327	-.0617	.0490	.0322
-1	-.3493	.1727	-.2223	.0837	.0256	-1	-.3648	.2291	-.0595	.0454	.0312
0	-.3288	.1727	-.2167	.0762	.0245	0	-.3388	.2279	-.0578	.0411	.0306
1	-.3164	.1768	-.2263	.0700	.0245	1	-.3222	.2279	-.0510	.0403	.0299
2	-.2794	.1768	-.2156	.0600	.0245	2	-.2961	.2243	-.0532	.0353	.0292
3	-.2466	.1789	-.2108	.0500	.0239	3	-.2724	.2219	-.0515	.0324	.0282
5	-.1644	.1852	-.1964	.0300	.0239	5	-.2037	.2159	-.0534	.0223	.0275
7	-.0740	.1873	-.1862	.0087	.0239	7	-.1256	.2099	-.0607	.0122	.0269
10	.0617	.1997	-.1653	-.0300	.0245	10	.0853	.2087	-.0798	-.0151	.0262
20	.4849	.3121	-.0601	-.1337	.0414	20	.6515	.3478	-.1497	-.0836	.0480
M = 0.80						M = 1.00					
-3	-.4199	.1956	-.0688	.0536	.0294	-3	-.3150	.2398	-.0951	.0386	.0328
-2	-.4087	.1941	-.0618	.0511	.0290	-2	-.2787	.2340	-.0875	.0338	.0318
-1	-.3891	.1941	-.0546	.0485	.0282	-1	-.2266	.2340	-.0875	.0282	.0308
0	-.3779	.1956	-.0511	.0460	.0278	0	-.2107	.2329	-.0804	.0248	.0305
1	-.3639	.1956	-.0524	.0434	.0278	1	-.1858	.2329	-.0807	.0220	.0302
2	-.3359	.1941	-.0509	.0409	.0274	2	-.1473	.2329	-.0856	.0193	.0302
3	-.2939	.1927	-.0559	.0349	.0270	3	-.1020	.2260	-.0922	.0193	.0296
5	-.2183	.1913	-.0633	.0238	.0262	5	-.0295	.2352	-.0960	.0021	.0296
7	-.1176	.1941	-.0675	.0111	.0258	7	.0113	.2294	-.0954	-.0028	.0286
10	.0700	.1984	-.0767	-.0136	.0254	10	.1722	.2237	-.0996	-.0234	.0283
20	.5038	.3118	-.1036	-.0681	.0421	20	.7432	.3786	-.1753	-.0965	.0537
M = 0.85						M = 1.05					
-3	-.4183	.2012	-.0648	.0533	.0300	-3	-.2929	.2318	-.0938	.0363	.0305
-2	-.4078	.1985	-.0595	.0517	.0297	-2	-.2452	.2263	-.0896	.0317	.0295
-1	-.3921	.1998	-.0517	.0501	.0293	-1	-.1974	.2252	-.0941	.0237	.0283
0	-.3791	.1998	-.0478	.0477	.0289	0	-.1562	.2252	-.0944	.0185	.0280
1	-.3660	.1985	-.0483	.0445	.0282	1	-.1150	.2307	-.0961	.0139	.0274
2	-.3399	.1985	-.0396	.0421	.0274	2	-.0759	.2307	-.0977	.0079	.0283
3	-.3137	.1985	-.0479	.0374	.0271	3	-.0434	.2307	-.1051	.0040	.0277
5	-.2353	.1959	-.0554	.0262	.0263	5	.0369	.2307	-.1155	-.0059	.0280
7	-.1359	.1946	-.0629	.0127	.0256	7	.1237	.2373	-.1204	-.0172	.0289
10	.0601	.1972	-.0746	-.0127	.0252	10	.2820	.2449	-.1255	-.0369	.0314
20	.5281	.3110	-.1134	-.0707	.0423	20	.8353	.4119	-.2011	-.1069	.0585
M = 0.90						M = 1.10					
-3	-.4283	.2156	-.0648	.0550	.0312	-3	-.2834	.2215	-.0906	.0367	.0275
-2	-.4233	.2131	-.0571	.0534	.0305	-2	-.2292	.2141	-.0900	.0298	.0263
-1	-.4085	.2131	-.0486	.0512	.0302	-1	-.1834	.2141	-.0885	.0241	.0257
0	-.3961	.2156	-.0430	.0489	.0295	0	-.1396	.2162	-.0875	.0196	.0248
1	-.3837	.2118	-.0289	.0474	.0295	1	.1042	.2184	-.1447	.0139	.0236
2	-.3565	.2118	-.0353	.0444	.0284	2	-.0688	.2205	-.0948	.0089	.0248
3	-.3293	.2081	-.0417	.0399	.0281	3	-.0271	.2215	-.0963	.0036	.0257
5	-.2426	.2056	-.0480	.0286	.0270	5	.0479	.2257	-.1089	-.0063	.0260
7	-.1386	.2031	-.0604	.0143	.0260	7	.1354	.2278	-.1192	-.0184	.0278
10	.0594	.2005	-.0752	-.0113	.0253	10	.2917	.2405	-.1242	-.0374	.0293
20	.5719	.3259	-.1242	-.0753	.0435	20	.8334	.4114	-.2019	-.1064	.0573

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(c) $x_s/c = 0.30$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.3248	.1977	-.0393	.0437	.0315	-3	-.3175	.2411	-.0448	.0375	.0349
-2	-.3330	.2040	-.0369	.0425	.0315	-2	-.3104	.2459	-.0409	.0375	.0356
-1	-.3330	.2081	-.0297	.0425	.0309	-1	-.3128	.2519	-.0380	.0375	.0356
0	-.3330	.2102	-.0282	.0425	.0309	0	-.3175	.2519	-.0313	.0389	.0356
1	-.3330	.2123	-.0281	.0400	.0297	1	-.3223	.2519	-.0299	.0382	.0356
2	-.3207	.2102	-.0332	.0387	.0297	2	-.3223	.2519	-.0244	.0375	.0356
3	-.3124	.2144	-.0271	.0362	.0297	3	-.3033	.2519	-.0230	.0346	.0349
5	-.2713	.2164	-.0279	.0300	.0297	5	-.2488	.2483	-.0276	.0259	.0339
7	-.2097	.2185	-.0317	.0200	.0291	7	-.1683	.2411	-.0358	.0151	.0329
10	-.0822	.2185	-.0479	.0025	.0291	10	-.0332	.2339	-.0371	-.0029	.0319
20	.3905	.3143	-.0922	-.0550	.0426	20	.5047	.3299	-.1236	-.0699	.0464
M = 0.80						M = 1.00					
-3	-.3221	.2170	-.0398	.0417	.0326	-3	-.2970	.2698	-.0600	.0317	.0383
-2	-.3109	.2212	-.0364	.0409	.0322	-2	-.2517	.2755	-.0628	.0269	.0379
-1	-.3165	.2255	-.0249	.0409	.0322	-1	-.2290	.2698	-.0589	.0234	.0379
0	-.3249	.2269	-.0222	.0417	.0322	0	-.2063	.2721	-.0587	.0214	.0373
1	-.3277	.2269	-.0225	.0417	.0322	1	-.1723	.2743	-.0672	.0152	.0370
2	-.3277	.2269	-.0165	.0400	.0322	2	-.1496	.2732	-.0614	.0124	.0367
3	-.3137	.2269	-.0124	.0383	.0318	3	-.1383	.2663	-.0654	.0110	.0360
5	-.2941	.2255	-.0124	.0341	.0314	5	-.0476	.2640	-.0776	-.0007	.0357
7	-.2465	.2198	-.0176	.0256	.0302	7	-.0023	.2583	-.0771	-.0062	.0341
10	-.0868	.2127	-.0285	.0034	.0298	10	.0884	.2514	-.0733	-.0179	.0341
20	.4117	.3035	-.0992	-.0579	.0429	20	.6213	.3696	-.1592	-.0869	.0534
M = 0.85						M = 1.05					
-3	-.3062	.2199	-.0444	.0390	.0327	-3	-.2736	.2660	-.0630	.0297	.0351
-2	-.3036	.2239	-.0385	.0374	.0327	-2	-.2301	.2682	-.0616	.0244	.0333
-1	-.3036	.2252	-.0314	.0366	.0323	-1	-.1976	.2649	-.0630	.0198	.0342
0	-.3088	.2265	-.0231	.0382	.0319	0	-.1650	.2649	-.0662	.0152	.0342
1	-.3167	.2265	-.0243	.0390	.0327	1	-.1390	.2660	-.0734	.0106	.0326
2	-.3245	.2305	-.0168	.0390	.0327	2	-.0999	.2682	-.0739	.0059	.0333
3	-.3167	.2279	-.0125	.0374	.0323	3	-.0651	.2649	-.0795	.0013	.0333
5	-.3036	.2252	-.0098	.0350	.0022	5	-.0022	.2660	-.0855	-.0073	.0329
7	-.2512	.2199	-.0147	.0271	.0308	7	.0825	.2638	-.0935	-.0178	.0333
10	-.0942	.2133	-.0249	.0048	.0301	10	.2062	.2671	-.0928	-.0337	.0351
20	.4292	.3060	-.1028	-.0597	.0434	20	.7468	.4089	-.1910	-.1010	.0573
M = 0.90						M = 1.10					
-3	-.3152	.2387	-.0202	.0385	.0334	-3	-.2647	.2543	-.0600	.0292	.0316
-2	-.3027	.2249	-.0473	.0370	.0331	-2	-.2209	.2543	-.0574	.0234	.0319
-1	-.2978	.2312	-.0336	.0355	.0331	-1	-.1897	.2532	-.0605	.0190	.0304
0	-.3052	.2387	-.0264	.0377	.0334	0	-.1542	.2543	-.0646	.0152	.0301
1	-.3176	.2374	-.0181	.0392	.0334	1	-.1209	.2543	-.0723	.0101	.0290
2	-.3251	.2362	-.0111	.0392	.0331	2	-.0959	.2564	-.0726	.0057	.0296
3	-.3127	.2324	-.0040	.0362	.0324	3	-.0563	.2554	-.0778	.0013	.0301
5	-.2606	.2249	-.0094	.0272	.0310	5	.0083	.2554	-.0841	-.0070	.0301
7	-.2481	.2211	-.0090	.0272	.0303	7	.0917	.2554	-.0912	-.0177	.0307
10	-.1017	.2186	-.0227	.0045	.0303	10	.2272	.2606	-.0946	-.0355	.0331
20	.4516	.3141	-.1122	-.0641	.0443	20	.7274	.4010	-.1883	-.1001	.0568

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(d) $x_S/c = 0.50$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60					
-3	-.5357	.1898	-.0252	.0689	.0257
-2	-.5151	.1878	-.0115	.0664	.0240
-1	-.4945	.1878	-.0024	.0626	.0234
0	-.4739	.1878	-.0002	.0601	.0234
1	-.4533	.1878	.0007	.0551	.0228
2	-.4327	.1857	.0028	.0526	.0222
3	-.4038	.1836	.0097	.0489	.0210
5	-.3296	.1794	.0114	.0376	.0210
7	-.2266	.1752	.0106	.0251	.0193
10	-.0494	.1731	.0105	.0013	.0193
20	.3956	.3025	-.0496	-.0539	.0356
M = 0.80					
-3	-.5555	.2188	-.0154	.0700	.0271
-2	-.5331	.2131	-.0022	.0665	.0263
-1	-.5050	.2102	.0055	.0631	.0251
0	-.4882	.2060	.0177	.0606	.0243
1	-.4658	.2060	.0190	.0572	.0243
2	-.4405	.2017	.0259	.0537	.0235
3	-.4068	.1989	.0323	.0486	.0227
5	-.3311	.1889	.0352	.0392	.0215
7	-.2301	.1790	.0398	.0256	.0203
10	-.0281	.1719	.0331	.0000	.0199
20	.4068	.2940	-.0375	-.0546	.0358
M = 0.85					
-3	-.5628	.2253	-.0170	.0724	.0282
-2	-.5236	.2187	-.0050	.0685	.0264
-1	-.5026	.2160	.0093	.0653	.0256
0	-.4764	.2120	.0173	.0629	.0252
1	-.4581	.2120	.0206	.0597	.0249
2	-.4319	.2054	.0292	.0565	.0241
3	-.3979	.2014	.0352	.0525	.0230
5	-.3272	.1922	.0400	.0430	.0219
7	-.2356	.1842	.0456	.0302	.0208
10	-.0209	.1763	.0391	.0032	.0200
20	.4188	.2942	-.0379	-.0525	.0360
M = 0.90					
-3	-.5702	.2385	-.0174	.0731	.0295
-2	-.5330	.2297	-.0056	.0686	.0278
-1	-.5032	.2272	.0055	.0648	.0271
0	-.4834	.2259	.0169	.0618	.0264
1	-.4661	.2221	.0219	.0595	.0260
2	-.4338	.2184	.0281	.0558	.0250
3	-.3966	.2121	.0352	.0513	.0239
5	-.3148	.2008	.0407	.0407	.0225
7	-.2107	.1895	.0451	.0271	.0214
10	.0000	.1845	.0371	.0015	.0211
20	.4437	.3012	-.0447	-.0550	.0373
M = 0.95					
-3	-.5334	.2496	-.0392	.0692	.0306
-2	-.4978	.2424	-.0247	.0641	.0292
-1	-.4622	.2400	-.0174	.0591	.0282
0	-.4267	.2364	-.0073	.0533	.0272
1	-.3911	.2340	-.0060	.0497	.0269
2	-.3556	.2280	.0019	.0454	.0259
3	-.3176	.2220	.0068	.0396	.0255
5	-.2252	.2100	.0097	.0303	.0239
7	-.0996	.2040	.0105	.0137	.0235
10	.0759	.2040	.0122	-.0086	.0239
20	.4907	.3180	-.0556	-.0627	.0397
M = 1.00					
-3	-.4489	.2525	-.0761	.0531	.0305
-2	-.3855	.2468	-.0746	.0455	.0293
-1	-.3288	.2434	-.0676	.0386	.0280
0	-.2880	.2411	-.0612	.0338	.0277
1	-.2494	.1263	-.0607	.0283	.0277
2	-.2154	.2376	-.0529	.0248	.0273
3	-.1814	.2319	-.0433	.0241	.0267
5	-.1134	.2181	-.0305	.0159	.0260
7	-.0113	.2147	-.0227	.0028	.0251
10	.1814	.2181	-.0212	-.0200	.0267
20	.5782	.3444	-.0796	-.0710	.0447
M = 1.05					
-3	-.4255	.2429	-.0776	.0522	.0296
-2	-.3669	.2363	-.0750	.0442	.0280
-1	-.3105	.2341	-.0702	.0376	.0274
0	-.2714	.2319	-.0627	.0323	.0271
1	-.2280	.2308	-.0624	.0277	.0262
2	-.1845	.2308	-.0579	.0224	.0262
3	-.1368	.2264	-.0556	.0165	.0265
5	-.0478	.2220	-.0494	.0059	.0256
7	.0608	.2187	-.0418	-.0066	.0256
10	.2280	.2231	-.0373	-.0257	.0277
20	.6730	.3792	-.1116	-.0832	.0511
M = 1.10					
-3	-.4148	.2374	-.0711	.0501	.0254
-2	-.3585	.2290	-.0775	.0437	.0269
-1	-.3022	.2258	-.0722	.0361	.0260
0	-.2564	.2248	-.0630	.0311	.0254
1	-.2168	.2248	-.0605	.0266	.0248
2	-.1709	.2216	-.0571	.0215	.0245
3	-.1292	.2205	-.0534	.0152	.0242
5	-.0417	.2163	-.0468	.0038	.0239
7	.0667	.2110	-.0405	-.0095	.0236
10	.2439	.2216	-.0375	-.0279	.0260
20	.6920	.3852	-.1185	-.0856	.0508

TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(e) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α_j deg	C_L	C_D	C_M	C_l	C_n	α_j deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4769	.2185	.0128	.0587	.0286	-3	-.4621	.2699	-.0103	.0569	.0339
-2	-.4604	.2185	.0249	.0562	.0280	-2	-.4313	.2639	.0007	.0533	.0329
-1	-.4522	.2185	.0370	.0537	.0268	-1	-.4029	.2639	.0124	.0504	.0323
0	-.4358	.2185	.0400	.0525	.0268	0	-.3815	.2603	.0192	.0483	.0316
1	-.4234	.2185	.0416	.0512	.0274	1	-.3673	.2639	.0250	.0454	.0319
2	-.4070	.2144	.0481	.0500	.0262	2	-.3483	.2579	.0370	.0425	.0313
3	-.3905	.2123	.0545	.0475	.0257	3	-.3199	.2579	.0400	.0389	.0309
5	-.3371	.2081	.0646	.0412	.0251	5	-.2441	.2459	.0521	.0303	.0289
7	-.2549	.1977	.0688	.0300	.0233	7	-.1422	.2339	.0613	.0166	.0279
10	-.0987	.1977	.0674	.0100	.0227	10	.0118	.2279	.0575	-.0014	.0276
20	.2672	.2914	.0215	-.0375	.0338	20	.3792	.3119	.0101	-.0461	.0383
M = 0.80						M = 1.00					
-3	-.4482	.2354	-.0064	.0554	.0290	-3	-.4081	.2916	-.0402	.0483	.0367
-2	-.4286	.2340	.0057	.0528	.0286	-2	-.3628	.2870	-.0337	.0448	.0354
-1	-.4117	.2326	.0193	.0511	.0278	-1	-.3514	.2870	-.0155	.0407	.0347
0	-.3921	.2297	.0244	.0485	.0274	0	-.2948	.2847	-.0246	.0345	.0347
1	-.3753	.2283	.0301	.0460	.0274	1	-.2494	.2812	-.0245	.0296	.0341
2	-.3613	.2269	.0397	.0451	.0270	2	-.2154	.2812	-.0185	.0248	.0338
3	-.3417	.2255	.0510	.0417	.0266	3	-.2041	.2755	-.0065	.0221	.0331
5	-.2885	.2127	.0634	.0358	.0250	5	-.1134	.2640	.0034	.0124	.0315
7	-.2101	.2028	.0772	.0264	.0238	7	-.0567	.2457	.0225	.0055	.0296
10	-.0532	.1999	.0749	.0060	.0234	10	.0907	.2411	.0274	.0565	.0299
20	.2801	.2865	.0319	-.0383	.0346	20	.4308	.3329	-.0092	-.0538	.0418
M = 0.85						M = 1.05					
-3	-.4449	.2385	-.0124	.0541	.0297	-3	-.3885	.2824	-.0480	.0436	.0348
-2	-.4109	.2371	.0023	.0501	.0289	-2	-.3364	.2802	-.0411	.0383	.0342
-1	-.3952	.2385	.0120	.0485	.0289	-1	-.2995	.2780	-.0362	.0337	.0335
0	-.3768	.2357	.0210	.0454	.0282	0	-.2583	.2769	-.0295	.0290	.0329
1	-.3585	.2318	.0242	.0446	.0282	1	-.2236	.2747	-.0273	.0251	.0326
2	-.3402	.2279	.0362	.0422	.0278	2	-.1866	.2725	-.0256	.0205	.0323
3	-.3271	.2265	.0472	.0406	.0271	3	-.1628	.2637	-.0175	.0172	.0317
5	-.2748	.2146	.0615	.0342	.0252	5	-.0651	.2582	-.0167	.0053	.0308
7	-.1963	.2053	.0731	.0239	.0241	7	.0434	.2560	-.0113	-.0079	.0302
10	-.0393	.2027	.0726	.0048	.0241	10	.2170	.2615	-.0156	-.0271	.0323
20	.2879	.2888	.0285	-.0382	.0349	20	.5317	.3626	-.0448	-.0673	.0474
M = 0.90						M = 1.10					
-3	-.4459	.2446	-.0137	.0542	.0309	-3	-.3814	.2733	-.0487	.0412	.0334
-2	-.4162	.2446	.0022	.0512	.0302	-2	-.3335	.2691	-.0456	.0355	.0322
-1	-.3914	.2421	.0102	.0490	.0299	-1	-.2897	.2680	-.0360	.0311	.0313
0	-.3716	.2408	.0222	.0459	.0292	0	-.2501	.2659	-.0279	.0260	.0304
1	-.3567	.2446	.0237	.0444	.0295	1	-.2084	.2659	-.0278	.0190	.0304
2	-.3419	.2446	.0417	.0437	.0292	2	-.1730	.2638	-.0261	.0146	.0301
3	-.3220	.1756	.0469	.0414	.0285	3	-.1355	.2585	-.0250	.0095	.0296
5	-.2651	.2258	.0625	.0331	.0267	5	-.0542	.2532	-.0165	-.0006	.0290
7	-.1858	.2132	.0708	.0234	.0249	7	.0521	.2480	-.0135	-.0133	.0284
10	-.0322	.2082	.0751	.0045	.0249	10	.2084	.2554	-.0146	-.0317	.0310
20	.3097	.2947	.0260	-.0407	.0362	20	.5419	.3693	-.0557	-.0748	.0482

TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(f) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.6326	.1674	.0514	.0717	.0193	-3	-.5718	.2099	.0282	.0645	.0253
-2	-.5871	.1570	.0602	.0679	.0188	-2	-.5027	.1990	.0287	.0580	.0243
-1	-.5499	.1507	.0665	.0616	.0170	-1	-.4574	.1869	.0451	.0536	.0220
0	-.5044	.1465	.0706	.0566	.0170	0	-.3979	.1821	.0509	.0471	.0209
1	-.4755	.1465	.0674	.0541	.0164	1	-.3455	.1809	.0503	.0406	.0209
2	-.4300	.1444	.0726	.0490	.0158	2	-.2811	.1749	.0520	.0333	.0199
3	-.3845	.1361	.0757	.0427	.0147	3	-.2549	.1628	.0688	.0290	.0182
5	-.2811	.1256	.0789	.0302	.0129	5	-.1144	.1592	.0743	.0138	.0182
7	-.1447	.1256	.0841	.0126	.0129	7	.0262	.1604	.0739	-.0022	.0186
10	.0537	.1382	.0687	-.0101	.0147	10	.2240	.1761	.0699	-.0268	.0216
20	.5747	.3224	-.0192	-.0767	.0393	20	.6695	.3389	-.0204	-.0877	.0446
M = 0.80						M = 1.00					
-3	-.3689	.1882	-.0046	.0762	.0220	-3	-.5266	.2089	.0073	.0596	.0255
-2	-.5998	.1782	.0719	.0719	.0204	-2	-.4491	.1997	.0030	.0506	.0242
-1	-.5576	.1697	.0810	.0634	.0192	-1	-.3716	.1939	.0019	.0409	.0233
0	-.5125	.1640	.0895	.0582	.0184	0	-.3123	.3058	.0092	.0347	.0223
1	-.4731	.1582	.0924	.0557	.0180	1	-.2644	.1858	.0111	.0291	.0217
2	-.4280	.1511	.0977	.0505	.0168	2	-.1983	.1835	.0141	.0215	.0207
3	-.3745	.1454	.1026	.0445	.0156	3	-.1391	.1789	.0222	.0139	.0204
5	-.2563	.1340	.1034	.0300	.0144	5	-.0137	.1766	.0289	.0007	.0204
7	-.1155	.1283	.1028	.0154	.0136	7	.1049	.1743	.0395	-.0132	.0204
10	.1183	.1426	.0813	-.0128	.0168	10	.3260	.2620	.0250	-.0395	.0252
20	.5801	.3094	-.0061	-.0754	.0387	20	.7728	.3774	-.0365	-.1012	.0508
M = 0.85						M = 1.05					
-3	-.6393	.1931	.0635	.0752	.0224	-3	-.5084	.2088	.0075	.0557	.0241
-2	-.5893	.1825	.0752	.0688	.0213	-2	-.4473	.1977	.0043	.0484	.0223
-1	-.5446	.1745	.0810	.0632	.0198	-1	-.3666	.1878	.0015	.0391	.0214
0	-.5236	.1678	.0970	.0584	.0190	0	-.3011	.1867	.0051	.0325	.0207
1	-.4604	.1785	.0922	.0552	.0187	1	-.2444	.1823	.0078	.0259	.0204
2	-.4052	.1558	.0983	.0488	.0172	2	-.1876	.1756	.0137	.0192	.0192
3	-.3499	.1519	.1038	.0432	.0160	3	-.1266	.1723	.0195	.0126	.0192
5	-.2368	.1399	.1097	.0280	.0146	5	.0022	.1712	.0263	-.0020	.0192
7	-.0974	.1359	.1121	.0128	.0146	7	.1571	.1767	.0221	-.0186	.0207
10	.1368	.1452	.0844	-.0144	.0175	10	.3579	.2077	.0103	-.0431	.0254
20	.5972	.3090	-.0063	-.0768	.0388	20	.8532	.4165	-.0553	-.1081	.0554
M = 0.90						M = 1.10					
-3	-.6179	.2018	.0545	.0720	.0237	-3	-.4923	.2004	.0089	.0554	.0232
-2	-.5606	.1917	.0638	.0652	.0219	-2	-.4336	.1898	.0057	.0484	.0217
-1	-.5058	.1829	.0715	.0598	.0208	-1	-.3624	.1803	.0041	.0408	.0205
0	-.4659	.1766	.0796	.0538	.0201	0	-.2912	.1761	.0048	.0325	.0199
1	-.4211	.1703	.0823	.0492	.0191	1	-.2346	.1729	.0068	.0268	.0187
2	-.3662	.1652	.0880	.0439	.0184	2	-.1801	.1686	.0113	.0204	.0184
3	-.3065	.1577	.0918	.0371	.0170	3	-.1173	.1676	.0183	.0134	.0181
5	-.1918	.1463	.0983	.0227	.0166	5	.0021	.1644	.0258	-.0006	.0181
7	-.0598	.1438	.1052	.0076	.0163	7	.1529	.1707	.0214	-.0178	.0199
10	.1545	.1526	.0871	-.0174	.0184	10	.3498	.2015	.0095	-.0414	.0244
20	.6179	.3166	-.0113	-.0795	.0583	20	.8400	.4125	-.0539	-.1045	.0544

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(g) $x_g/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.5944	.1964	.0656	.0728	.0228	-3	-.6119	.2447	.0561	.0717	.0304
-2	-.5655	.1901	.0795	.0690	.0222	-2	-.5500	.2362	.0629	.0652	.0287
-1	-.5448	.1839	.0793	.0653	.0217	-1	-.4928	.2302	.0676	.0586	.0273
0	-.5159	.1797	.0320	.0627	.0199	0	-.4500	.2182	.0792	.0536	.0263
1	-.4870	.1776	.0955	.0590	.0205	1	-.4047	.2146	.0817	.0492	.0250
2	-.4499	.1734	.0959	.0540	.0193	2	-.3500	.2061	.0889	.0420	.0240
3	-.4127	.1714	.1054	.0502	.0187	3	-.2833	.2013	.0861	.0340	.0230
5	-.3054	.1609	.1130	.0376	.0164	5	-.1714	.1941	.0998	.0224	.0216
7	-.1981	.1546	.1184	.0251	.0152	7	-.0405	.1880	.1009	.0065	.0213
10	-.0206	.1630	.1111	.0038	.0164	10	.1500	.2001	.0883	-.0174	.0226
20	.3591	.2967	.0530	-.0515	.0328	20	.4905	.3327	.0402	-.0644	.0385
M = 0.80						M = 1.00					
-3	-.6073	.2078	.0639	.0727	.0255	-3	-.5581	.2457	.0278	.0644	.0300
-2	-.5595	.1993	.0723	.0675	.0239	-2	-.4829	.2376	.0272	.0561	.0288
-1	-.5257	.1936	.0827	.0633	.0227	-1	-.4260	.2295	.0291	.0499	.0271
0	-.4836	.1893	.0871	.0581	.0219	0	-.3759	.2260	.0379	.0436	.0262
1	-.4470	.1836	.0912	.0539	.0215	1	-.3235	.2226	.0385	.0381	.0255
2	-.4076	.1751	.0995	.0496	.0203	2	-.2665	.2168	.0424	.0312	.0242
3	-.3599	.1722	.1065	.0445	.0195	3	-.2027	.2088	.0511	.0229	.0233
5	-.2502	.1580	.1100	.0316	.0179	5	-.0843	.2053	.0592	.0104	.0229
7	-.1321	.1580	.1169	.0180	.0171	7	.0410	.2030	.0632	-.0035	.0226
10	.0647	.1694	.1002	-.0068	.0187	10	.2187	.2203	.0640	-.0256	.0249
20	.3739	.2932	.0601	-.0513	.0331	20	.6060	.3725	.0047	-.0790	.0446
M = 0.85						M = 1.05					
-3	-.6021	.2143	.0612	.0727	.0261	-3	-.5451	.2407	.0258	.0623	.0278
-2	-.5337	.2037	.0652	.0664	.0250	-2	-.4732	.2296	.0238	.0544	.0263
-1	-.5180	.1983	.0841	.0624	.0048	-1	-.4012	.2219	.0281	.0451	.0247
0	-.4733	.1903	.0904	.0568	.0224	0	-.3467	.2175	.0318	.0404	.0241
1	-.4391	.1864	.0943	.0528	.0216	1	-.3096	.2142	.0350	.0351	.0235
2	-.3944	.1810	.0991	.0480	.0209	2	-.2551	.2108	.0406	.0285	.0223
3	-.3365	.1744	.1038	.0424	.0198	3	-.1897	.2020	.0478	.0219	.0213
5	-.2340	.1637	.1135	.0304	.0183	5	-.0632	.1987	.0535	.0073	.0210
7	-.1052	.1624	.1153	.0152	.0179	7	.0741	.1998	.0530	-.0093	.0216
10	.0999	.1770	.0964	-.0112	.0198	10	.2682	.2252	.0431	-.0325	.0257
20	.3944	.2995	.0611	-.0536	.0343	20	.6825	.3930	-.0225	-.0875	.0489
M = 0.90						M = 1.10					
-3	-.6247	.2256	.0650	.0734	.0279	-3	-.5382	.2332	.0291	.0611	.0261
-2	-.5650	.2155	.0735	.0674	.0265	-2	-.4754	.2205	.0270	.0535	.0246
-1	-.5227	.2092	.0815	.0621	.0254	-1	-.4083	.2131	.0269	.0465	.0235
0	-.4754	.2029	.0911	.0568	.0240	0	-.3497	.2089	.0318	.0401	.0226
1	-.4306	.1953	.0928	.0522	.0229	1	-.2974	.2078	.0353	.0337	.0220
2	-.3858	.1890	.0997	.0477	.0219	2	-.2429	.2025	.0396	.0267	.0214
3	-.3211	.1777	.1030	.0401	.0205	3	-.1864	.1972	.0468	.0210	.0208
5	-.2165	.1739	.1141	.0280	.0194	5	-.0628	.1930	.0524	.0070	.0202
7	-.0846	.1676	.1168	.0129	.0187	7	.0859	.1961	.0459	-.0108	.0208
10	.1170	.1840	.0927	-.0129	.0205	10	.2618	.2237	.0400	-.0325	.0246
20	.4306	.3138	.0565	-.0583	.0360	20	.6869	.3986	-.0315	-.0891	.0493

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(h) $x_S/c = 0.70$; $\delta_S = -0.075$; $\delta_d/\delta_S = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.5084	.2197	.0315	.0616	.0246	-3	-.5573	.2725	.0394	.0630	.0317
-2	-.4712	.2197	.0387	.0578	.0240	-2	-.5073	.2653	.0477	.0572	.0311
-1	-.4381	.2155	.0457	.0540	.0229	-1	-.4620	.2580	.0553	.0521	.0294
0	-.4133	.2092	.0513	.0503	.0229	0	-.4120	.2472	.0630	.0471	.0277
1	-.3844	.2134	.0536	.0465	.0229	1	-.3739	.2496	.0724	.0427	.0277
2	-.3472	.2092	.0595	.0415	.0217	2	-.3310	.2472	.0765	.0377	.0274
3	-.3182	.2092	.0675	.0390	.0211	3	-.2739	.2399	.0773	.0311	.0267
5	-.2273	.2030	.0788	.0276	.0199	5	-.1453	.2339	.0831	.0196	.0257
7	-.1446	.2030	.0875	.0163	.0193	7	-.0595	.2291	.0977	.0065	.0253
10	.0000	.2092	.0915	.0000	.0199	10	.1096	.2363	.0853	-.0152	.0260
20	.2810	.3243	.0751	-.0415	.0334	20	.4287	.3557	.0574	-.0608	.0419
M = 0.80						M = 1.00					
-3	-.5067	.2309	.0271	.0599	.0267	-3	-.5445	.2849	.0255	.0603	.0339
-2	-.4645	.2266	.0386	.0539	.0255	-2	-.4852	.2768	.0325	.0533	.0326
-1	-.4279	.2209	.0419	.0496	.0248	-1	-.4374	.2710	.0410	.0485	.0313
0	-.3885	.2195	.0522	.0454	.0236	0	-.3873	.2676	.0471	.0429	.0307
1	-.3519	.2166	.0540	.0411	.0240	1	-.3417	.2676	.0490	.0374	.0304
2	-.3097	.2138	.0613	.0368	.0232	2	-.2848	.2607	.0530	.0312	.0291
3	-.2674	.2095	.0680	.0317	.0228	3	-.2278	.2537	.0549	.0242	.0281
5	-.1689	.1995	.0756	.0197	.0212	5	-.1253	.2457	.0653	.0139	.0275
7	-.0704	.1981	.0824	.0077	.0208	7	-.0159	.2422	.0742	-.0007	.0275
10	.0844	.2138	.0762	-.0103	.0224	10	.1549	.2572	.0673	-.0208	.0294
20	.3603	.1867	.0750	-.0514	.0367	20	.5035	.3864	.0309	-.0686	.0465
M = 0.85						M = 1.05					
-3	-.5129	.2343	.0266	.0592	.0272	-3	-.5233	.2716	.0232	.0577	.0331
-2	-.4682	.2290	.0381	.0536	.0261	-2	-.4666	.2661	.0274	.0511	.0315
-1	-.4261	.2224	.0648	.0488	.0250	-1	-.4187	.2605	.0344	.0464	.0303
0	-.3814	.2197	.0520	.0440	.0242	0	-.3707	.2583	.0421	.0404	.0294
1	-.3498	.2170	.0534	.0400	.0246	1	-.3227	.2539	.0479	.0351	.0291
2	-.3077	.2130	.0618	.0352	.0235	2	-.2726	.2484	.0482	.0305	.0284
3	-.2578	.2077	.0668	.0296	.0231	3	-.2202	.2429	.0530	.0232	.0275
5	-.1578	.2024	.0754	.0176	.0216	5	-.1112	.2373	.0615	.0113	.0263
7	-.0526	.2011	.0806	.0056	.0213	7	.0174	.2362	.0617	-.0040	.0263
10	.1026	.1491	.0771	-.0128	.0235	10	.1941	.2572	.0538	-.0245	.0294
20	.3814	.3329	.0592	-.0528	.0373	20	.5342	.3886	.0151	-.0729	.0473
M = 0.90						M = 1.10					
-3	-.5303	.2433	.0277	.0598	.0282	-3	-.5233	.2597	.0233	.0579	.0318
-2	-.4830	.2395	.0357	.0538	.0272	-2	-.4606	.2533	.0248	.0509	.0303
-1	-.4357	.2307	.0472	.0492	.0258	-1	-.3915	.2480	.0287	.0439	.0291
0	-.3909	.2294	.0538	.0447	.0254	0	-.3517	.2448	.0346	.0395	.0282
1	-.3486	.2256	.0596	.0394	.0247	1	-.2973	.2427	.0433	.0325	.0270
2	-.3112	.2244	.0647	.0348	.0244	2	-.2512	.2363	.0449	.0280	.0267
3	-.2614	.2143	.0674	.0288	.0233	3	-.1968	.2310	.0520	.0204	.0255
5	-.1544	.2080	.0772	.0174	.0226	5	-.0984	.2279	.0581	.0089	.0252
7	-.0548	.2067	.0895	.0053	.0222	7	.0377	.2279	.0563	-.0064	.0252
10	.1120	.2206	.0735	-.0144	.0240	10	.1989	.2469	.0498	-.0267	.0285
20	.4009	.3403	.0585	-.0560	.0392	20	.6008	.4070	-.0125	-.0802	.0502

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Continued

(i) $x_S/c = 0.90$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_i	C_n	α , deg	C_L	C_D	C_M	C_i	C_n
M = 0.60						M = 0.95					
-3	-.5959	.1768	.1224	.0700	.0256	-3	-.6161	.2243	.1302	.0757	.0309
-2	-.5342	.1685	.1247	.0637	.0245	-2	-.5450	.2123	.1348	.0670	.0286
-1	-.4932	.1664	.1275	.0575	.0227	-1	-.4858	.2040	.1369	.0605	.0276
0	-.4438	.1644	.1305	.0537	.0221	0	-.4384	.1980	.1394	.0540	.0269
1	-.4110	.1602	.1284	.0487	.0221	1	-.3792	.1944	.1437	.0490	.0259
2	-.3699	.1560	.1312	.0437	.0216	2	-.2962	.1800	.1420	.0382	.0239
3	-.3082	.1560	.1404	.0375	.0204	3	-.2370	.1920	.1528	.0331	.0252
5	-.1973	.1456	.1344	.0237	.0192	5	-.0948	.1884	.1521	.0187	.0249
7	-.0699	.1498	.1345	.0100	.0186	7	.0592	.1884	.1400	-.0007	.0245
10	.1233	.1810	.1169	-.0125	.0216	10	.2962	.2171	.1033	-.0303	.0286
20	.5959	.3745	.0004	-.0800	.0466	20	.7583	.4199	-.0271	-.0958	.0551
M = 0.80						M = 1.00					
-3	-.5906	.1885	.1186	.0706	.0262	-3	-.6347	.2410	.2707	.0786	.0328
-2	-.5374	.1800	.1218	.0647	.0250	-2	-.5485	.2295	.1384	.0689	.0312
-1	-.4787	.1715	.1282	.0579	.0238	-1	-.4873	.2203	.1406	.0620	.0296
0	-.4227	.1701	.1292	.0511	.0234	0	-.4261	.2123	.1477	.0551	.0286
1	-.3835	.1658	.1304	.0460	.0226	1	-.3740	.2066	.1465	.0489	.0273
2	-.3275	.1573	.1352	.0400	.0218	2	-.3015	.1985	.1465	.0400	.0264
3	-.2547	.1545	.1336	.0323	.0210	3	-.2380	.1962	.1519	.0338	.0257
5	-.1260	.1488	.1378	.0179	.0202	5	-.0907	.1962	.1483	.0179	.0254
7	-.0084	.1559	.1360	.0043	.0202	7	.0680	.2054	.1321	-.0014	.0264
10	.2239	.1899	.1011	-.0247	.0250	10	.3128	.2352	.0979	-.0324	.0312
20	.6690	.3755	-.0194	-.0868	.0488	20	.7842	.4498	-.0135	-.0979	.0595
M = 0.85						M = 1.05					
-3	-.5888	.1921	.1180	.0700	.0267	-3	-.6229	.2318	.1476	.0779	.0311
-2	-.5260	.1828	.1235	.0637	.0256	-2	-.5448	.2198	.1410	.0680	.0295
-1	-.4710	.1749	.1295	.0573	.0245	-1	-.4666	.2110	.1387	.0601	.0283
0	-.4187	.1722	.1318	.0517	.0238	0	-.4124	.2033	.1426	.0528	.0268
1	-.3690	.1656	.1296	.0462	.0226	1	-.3473	.1956	.1387	.0455	.0252
2	-.3140	.1590	.1349	.0398	.0219	2	-.2778	.1901	.1436	.0383	.0246
3	-.2408	.1537	.1350	.0310	.0208	3	-.2062	.1879	.1437	.0304	.0243
5	-.1282	.1524	.1399	.0183	.0204	5	-.0651	.1868	.1372	.0152	.0240
7	.0183	.1590	.1386	.0024	.0212	7	.1042	.1989	.1167	-.0053	.0252
10	.2460	.1921	.0973	-.0255	.0252	10	.3104	.2362	.0899	-.0323	.0302
20	.6804	.3789	-.0202	-.0883	.0497	20	.7922	.4692	-.0016	-.0977	.0606
M = 0.90						M = 1.10					
-3	-.5946	.2007	.1198	.0723	.0278	-3	-.6105	.2215	.1495	.0754	.0295
-2	-.5326	.1906	.1244	.0648	.0263	-2	-.5417	.2110	.1441	.0684	.0281
-1	-.4757	.1881	.1336	.0588	.0253	-1	-.4667	.2004	.1438	.0596	.0263
0	-.4212	.1781	.1330	.0512	.0242	0	-.4021	.1909	.1413	.0526	.0251
1	-.3716	.1718	.1338	.0467	.0235	1	-.3438	.1857	.1405	.0462	.0242
2	-.2973	.1643	.1353	.0377	.0218	2	-.2750	.1814	.1399	.0380	.0236
3	-.2353	.1631	.1398	.0309	.0218	3	-.1979	.1793	.1433	.0298	.0233
5	-.1041	.1631	.1436	.0173	.0218	5	-.0417	.1793	.1260	.0120	.0230
7	.0297	.1668	.1365	.0023	.0218	7	.1042	.1899	.1082	-.0057	.0242
10	.2700	.2007	.1050	-.0279	.0263	10	.3021	.2268	.0819	-.0310	.0290
20	.7184	.3951	-.0252	-.0927	.0516	20	.7709	.4536	-.0043	-.0950	.0582

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TABLE II. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-2 WING - Concluded

(j) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.5248	.1930	.0865	.0636	.0291	-3	-.5790	.2513	.0983	.0675	.0349
-2	-.4756	.1889	.0906	.0573	.0273	-2	-.5081	.2393	.0973	.0589	.0328
-1	-.4305	.1847	.0969	.0524	.0262	-1	-.4538	.2273	.1045	.0532	.0315
0	-.3895	.1827	.0974	.0461	.0262	0	-.3900	.2237	.1074	.0467	.0302
1	-.3526	.1827	.0884	.0424	.0256	1	-.3427	.2214	.1078	.0410	.0298
2	-.3034	.1806	.1017	.0374	.0244	2	-.2789	.2118	.1109	.0331	.0285
3	-.2624	.1785	.0976	.0324	.0238	3	-.2080	.2094	.1133	.0259	.0278
5	-.1517	.1723	.1005	.0187	.0233	5	-.0874	.2034	.1166	.0122	.0268
7	-.0410	.1764	.1000	.0062	.0233	7	.0473	.2058	.1109	-.0022	.0271
10	.1394	.2055	.0887	-.0137	.0256	10	.2600	.2357	.0825	-.0295	.0315
20	.5822	.3944	-.0237	-.0798	.0494	20	.7374	.4307	-.0467	-.0963	.0576
M = 0.80						M = 1.00					
-3	-.5447	.2107	.0880	.0646	.0301	-3	-.5993	.2690	.1057	.0694	.0372
-2	-.4861	.2022	.0905	.0586	.0289	-2	-.5178	.2599	.1032	.0605	.0359
-1	-.4330	.1952	.0958	.0518	.0273	-1	-.4523	.2519	.1060	.0529	.0343
0	-.3743	.1923	.0991	.0459	.0269	0	-.3889	.2461	.1099	.0461	.0334
1	-.3380	.1909	.0978	.0408	.0265	1	-.3437	.2427	.1133	.0413	.0327
2	-.2794	.1881	.1026	.0348	.0257	2	-.2714	.2313	.1132	.0323	.0311
3	-.2151	.1810	.1021	.0272	.0246	3	-.2148	.2290	.1170	.0268	.0305
5	-.0978	.1768	.1096	.0136	.0238	5	-.0905	.2175	.1190	.0131	.0292
7	.0223	.1796	.1070	.0008	.0238	7	.0475	.2290	.1115	-.0034	.0305
10	.2179	.2121	.0786	-.0229	.0281	10	.2714	.2587	.0801	-.0309	.0346
20	.6425	.3960	-.0317	-.0841	.0515	20	.7915	.4751	-.0304	-.1024	.0635
M = 0.85						M = 1.05					
-3	-.5535	.2168	.0892	.0659	.0307	-3	-.5890	.2609	.1080	.0691	.0365
-2	-.4908	.2062	.0908	.0587	.0292	-2	-.5153	.2521	.1036	.0593	.0350
-1	-.4308	.2009	.0976	.0524	.0281	-1	-.4331	.2412	.1015	.0514	.0338
0	-.3812	.1969	.1004	.0468	.0274	0	-.3789	.2379	.1098	.0454	.0322
1	-.3290	.1943	.1048	.0413	.0267	1	-.3270	.2335	.1080	.0395	.0313
2	-.2794	.1903	.1046	.0341	.0259	2	-.2598	.2247	.1144	.0309	.0301
3	-.2089	.1824	.1016	.0254	.0252	3	-.1927	.2203	.1148	.0244	.0298
5	-.0862	.1811	.1096	.0127	.0241	5	-.0650	.2203	.1125	.0099	.0295
7	.0366	.1850	.1051	-.0008	.0248	7	.0693	.2291	.1018	-.0053	.0301
10	.2271	.2141	.0794	-.0254	.0285	10	.2880	.2631	.0709	-.0336	.0347
20	.6736	.4031	-.0393	-.0881	.0529	20	.7708	.4878	-.0229	-.1001	.0639
M = 0.90						M = 1.10					
-3	-.5635	.2290	.0912	.0661	.0319	-3	-.5899	.2517	.1123	.0666	.0508
-2	-.4943	.2190	.0922	.0586	.0305	-2	-.5162	.2421	.1075	.0577	.0344
-1	-.4424	.2102	.0997	.0519	.0291	-1	-.4424	.2347	.1057	.0493	.0329
0	-.3831	.2040	.1027	.0466	.0280	0	-.3687	.2261	.1069	.0410	.0314
1	-.3337	.2002	.0998	.0398	.0277	1	-.3160	.2240	.1104	.0352	.0305
2	-.2743	.1977	.1048	.0338	.0266	2	-.2444	.2133	.1099	.0269	.0299
3	-.2076	.1914	.1060	.0256	.0259	3	-.1896	.2112	.1111	.0205	.0290
5	-.0915	.1877	.1120	.0128	.0252	5	-.0632	.2133	.1083	.0064	.0284
7	.0470	.1902	.1042	-.0015	.0256	7	.0948	.2240	.0905	-.0122	.0290
10	.2422	.2252	.0861	-.0271	.0298	10	.2907	.2560	.0646	-.0372	.0338
20	.7044	.4129	-.0439	-.0924	.0547	20	.7585	.4800	-.0218	-.1012	.0618

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TABLE III.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING

(a) Plain Wing

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.2129	.0056	-.0086	.0247	.0013	-3	-.2837	.0210	-.0020	.0317	.0029
-2	-.1466	.0042	-.0059	.0174	.0010	-2	-.2072	.0113	-.0016	.0207	.0018
-1	-.0774	.0028	.0007	.0090	.0005	-1	-.0924	.0065	-.0014	.0100	.0015
0	-.0194	.0014	.0049	.0022	.0005	0	-.0048	.0065	.0008	-.0006	.0015
1	.0442	.0028	.0014	-.0056	.0005	1	.1004	.0073	.0039	-.0126	.0018
2	.1079	.0042	.0070	-.0135	.0010	2	.1833	.0121	.0076	-.0223	.0026
3	.1742	.0098	.0121	-.0219	.0016	3	.2725	.0202	.0052	-.0333	.0036
5	.3097	.0252	.0199	-.0376	.0034	5	.4382	.0468	-.0160	-.0539	.0077
7	.4480	.0504	.0265	-.0549	.0073	7	.6088	.0855	-.0490	-.0753	.0137
10	.6333	.1134	-.0061	-.0807	.0167	10	.8223	.1525	-.0785	-.1014	.0238
20	.7577	.3052	-.0888	-.0998	.0413	20	1.0040	.3856	-.1463	-.1273	.0530
M = 0.80						M = 1.00					
-3	-.2486	.0105	-.0147	.0283	.0021	-3	-.2820	.0293	.0188	.0321	.0039
-2	-.1695	.0048	-.0088	.0187	.0012	-2	-.1799	.0201	.0110	.0201	.0027
-1	-.0848	.0010	-.0062	.0099	.0009	-1	-.0899	.0139	.0055	.0096	.0022
0	-.0151	.0000	-.0015	.0015	.0007	0	.0030	.0139	.0026	-.0009	.0022
1	.0546	.0019	.0075	-.0073	.0011	1	.1021	.0154	-.0004	-.0127	.0026
2	.1281	.0057	.0128	-.0160	.0016	2	.1875	.0201	-.0052	-.0232	.0035
3	.2185	.0124	.0190	-.0263	.0021	3	.2728	.0293	-.0109	-.0340	.0048
5	.3786	.0296	.0315	-.0454	.0048	5	.4207	.0525	-.0266	-.0507	.0082
7	.5406	.0601	.0274	-.0657	.0098	7	.5670	.0849	-.0487	-.0689	.0133
10	.7120	.1211	.0091	-.0894	.0182	10	.7835	.1528	-.0886	-.0961	.0229
20	.7949	.3128	-.0970	-.1020	.0426						
M = 0.85						M = 1.05					
-3	-.2657	.0125	-.0157	.0293	.0022	-3	-.2597	.0397	.0105	.0294	.0032
-2	-.1725	.0062	-.0119	.0186	.0015	-2	-.1813	.0309	.0026	.0203	.0023
-1	-.0862	.0018	-.0080	.0086	.0010	-1	-.1045	.0264	.0002	.0118	.0018
0	-.0106	.0000	.0002	.0000	.0008	0	-.0290	.0235	.0004	.0029	.0015
1	.0686	.0036	.0100	-.0093	.0012	1	.0464	.0250	.0017	-.0056	.0018
2	.1426	.0071	.0209	-.0186	.0017	2	.1306	.0286	.0017	-.0159	.0023
3	.3273	.0125	.0018	-.0296	.0025	3	.1988	.0345	-.0014	-.0235	.0032
5	.4171	.0339	.0239	-.0507	.0060	5	.3264	.0521	-.0175	-.0385	.0058
7	.5667	.0668	.0149	-.0696	.0111	7	.4700	.0779	-.0395	-.0556	.0097
10	.7409	.1292	-.0010	-.0931	.0196	10	.6789	.1373	-.0753	-.0818	.0182
20	.8254	.3252	-.1055	-.1056	.0441						
M = 0.90						M = 1.10					
-3	-.2832	.0169	-.0153	.0314	.0024	-3	-.2689	.0409	.0173	.0305	.0032
-2	-.1799	.0067	-.0165	.0196	.0016	-2	-.1909	.0324	.0110	.0215	.0021
-1	-.0850	.0025	-.0068	.0084	.0011	-1	-.1073	.0261	.0051	.0119	.0014
0	-.0017	.0025	.0013	-.0014	.0011	0	-.0237	.0226	.0032	.0025	.0014
1	.0800	.0034	.0122	-.0111	.0013	1	.0543	.0254	.0003	-.0068	.0017
2	.1583	.0067	.0218	-.0196	.0019	2	.1254	.0282	-.0023	-.0150	.0021
3	.2582	.0152	.0248	-.0317	.0030	3	.2048	.0346	-.0087	-.0246	.0032
5	.4348	.0388	.0083	-.0530	.0066	5	.3288	.0515	-.0191	-.0390	.0057
7	.6148	.0784	-.0175	-.0756	.0126	7	.6506	.1319	-.0719	-.0785	.0171
10	.7864	.1417	-.0344	-.1003	.0219						
20	.8897	.3441	-.0730	-.1121	.0468						

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TABLE III. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Continued

(b) $x_s/c = 0.30$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4451	.1750	-.0683	.0538	.0254	-3	-.5020	.2558	-.0675	.0607	.0334
-2	-.4423	.1764	-.0658	.0527	.0251	-2	-.4621	.2477	-.0695	.0543	.0324
-1	-.4285	.1820	-.0622	.0510	.0251	-1	-.4303	.2396	-.0621	.0510	.0312
0	-.4147	.1820	-.0548	.0476	.0254	0	-.3586	.2420	-.0641	.0423	.0312
1	-.3870	.1889	-.0472	.0454	.0254	1	-.2868	.2437	-.1197	.0333	.0319
2	-.3677	.1876	-.0528	.0409	.0251	2	-.3028	.2356	-.0623	.0355	.0304
3	-.3318	.1862	-.0534	.0364	.0251	3	-.2550	.2340	-.0664	.0300	.0304
5	-.1465	.1889	-.0712	.0118	.0248	5	-.2072	.2299	-.0671	.0220	.0294
7	.0193	.1988	-.0820	-.0095	.0254	7	-.1195	.2219	-.0774	.0116	.0286
10	.4921	.3079	-.0805	-.0701	.0408	10	.0797	.2178	-.0893	-.0145	.0285
						20	.6853	.3493	-.1543	-.0888	.0469
M = 0.80						M = 1.00					
-3	-.4708	.2002	-.0574	.0584	.0280	-3	-.3963	.2547	-.0854	.0460	.0333
-2	-.4689	.2002	-.0549	.0576	.0274	-2	-.3430	.2469	-.0954	.0399	.0321
-1	-.4576	.1992	-.0496	.0561	.0271	-1	-.2896	.2415	-.0949	.0318	.0313
0	-.4331	.2002	-.0444	.0527	.0271	0	-.2134	.2400	-.0967	.0256	.0311
1	-.4143	.2002	-.0395	.0496	.0271	1	-.1722	.2431	-.0988	.0198	.0385
2	-.3954	.2002	-.0372	.0470	.0269	2	-.1601	.2408	-.0921	.0170	.0316
3	-.3785	.2002	-.0335	.0443	.0265	3	-.1524	.2369	-.0900	.0167	.0310
5	-.3145	.1954	-.0366	.0355	.0258	5	-.0610	.2392	-.1047	.0000	.0313
7	-.2071	.1954	-.0473	.0214	.0255	7	.0381	.2408	-.1114	-.0077	.0317
10	.0264	.1907	-.0727	-.0095	.0255	10	.1982	.2292	-.1121	-.0275	.0304
20	.5367	.3070	-.1076	-.0733	.0418	20	.7469	.3704	-.1680	-.0949	.0496
M = 0.85						M = 1.05					
-3	-.4785	.2138	-.0598	.0599	.0289	-3	-.3649	.2438	-.0857	.0426	.0312
-2	-.4750	.2066	-.0542	.0585	.0283	-2	-.3094	.2350	-.0957	.0364	.0299
-1	-.4574	.2066	-.0496	.0567	.0279	-1	-.2481	.2291	-.0983	.0293	.0291
0	-.4398	.2093	-.0401	.0539	.0278	0	-.1970	.2291	-.0956	.0231	.0290
1	-.4222	.2093	-.0381	.0335	.0278	1	-.1606	.2328	-.0968	.0183	.0293
2	-.4134	.2093	-.0319	.0496	.0276	2	-.1168	.2350	-.1007	.0124	.0295
3	-.3906	.2049	-.0277	.0460	.0269	3	-.1460	.2365	-.0850	.0068	.0299
5	-.3343	.2022	-.0313	.0378	.0264	5	.0219	.2387	-.1189	-.0050	.0299
7	-.2217	.1968	-.0484	.0232	.0259	7	.1124	.2438	-.1276	-.0160	.0309
10	.0299	.1942	-.0709	-.0093	.0256	10	.3050	.2490	-.1369	-.0399	.0320
20	.5718	.3162	-.1195	-.0767	.0429	20	.7736	.3621	-.1780	-.0967	.0486
M = 0.90						M = 1.10					
-3	-.5165	.2319	-.0661	.0652	.0312	-3	-.3503	.2341	-.0811	.0412	.0293
-2	-.5448	.2362	-.0566	.0659	.0315	-2	-.2985	.2256	-.0919	.0349	.0281
-1	-.4998	.2319	-.0512	.0608	.0306	-1	-.2480	.2199	-.0957	.0290	.0274
0	-.4715	.2311	-.0429	.0567	.0301	0	-.1892	.2199	-.0918	.0222	.0266
1	-.4498	.2286	-.0410	.0544	.0299	1	-.1541	.2235	-.0946	.0173	.0268
2	-.4165	.2235	-.0386	.0507	.0293	2	-.1121	.2270	-.0967	.0116	.0270
3	-.3832	.2235	-.0377	.0449	.0288	3	-.0631	.2270	-.1012	.0060	.0273
5	-.2949	.2168	-.0469	.0331	.0282	5	.0140	.2306	-.1124	-.0045	.0277
7	-.1999	.2083	-.0522	.0213	.0268	7	.1093	.2355	-.1217	-.0159	.0286
10	.0333	.1999	-.0737	-.0091	.0260	10	.2802	.2412	-.1316	-.0375	.0297
20	.6048	.3247	-.1317	-.0800	.0436	20	.7707	.3015	-.1728	-.0815	.0427

TABLE III.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Continued

(c) $x_g/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.6411	.2034	-.0188	.0786	.0268	-3	-.6517	.2777	-.0337	.0791	.0330
-2	-.6081	.2034	-.0018	.0747	.0263	-2	-.5359	.2633	-.0514	.0701	.0318
-1	-.5723	.1950	.0085	.0697	.0255	-1	-.4963	.2513	-.0345	.0604	.0307
0	-.5531	.1950	.0152	.0667	.0250	0	-.4804	.2472	-.0205	.0572	.0303
1	-.5255	.1950	.0197	.0630	.0247	1	-.3932	.2432	-.0172	.0482	.0295
2	-.4898	.1895	.0268	.0591	.0239	2	-.3615	.2352	-.0058	.0437	.0288
3	-.4623	.1867	.0337	.0547	.0234	3	-.3139	.2312	-.0022	.0389	.0280
5	-.3880	.1755	.0382	.0441	.0224	5	-.2426	.2135	.0167	.0299	.0256
7	-.2807	.1727	.0359	.0307	.0213	7	-.1157	.2031	.0269	.0148	.0241
10	-.0468	.1644	.0329	.0017	.0208	10	.1221	.1975	.0247	-.0141	.0246
20	.4045	.2870	-.0302	-.0569	.0364	20	.3235	.2312	.0013	-.0415	.0300
M = 0.80						M = 1.00					
-3	-.6428	.2258	-.0200	.0783	.0285	-3	-.5426	.2732	-.0724	.0630	.0335
-2	-.6016	.2201	-.0082	.0733	.0275	-2	-.4820	.2609	-.0723	.0562	.0317
-1	-.5585	.2144	.0058	.0684	.0266	-1	-.4138	.2501	-.0689	.0492	.0307
0	-.5360	.2106	.0087	.0657	.0262	0	-.3456	.2478	-.0709	.0402	.0302
1	-.4892	.2069	.0208	.0600	.0257	1	-.2774	.2471	-.0607	.0320	.0302
2	-.4610	.2021	.0311	.0562	.0248	2	-.2319	.2478	-.0520	.0264	.0299
3	-.4367	.1974	.0398	.0528	.0243	3	-.1985	.2440	-.0443	.0215	.0295
5	-.3711	.1879	.0511	.0448	.0230	5	-.1334	.2287	-.0231	.0154	.0279
7	-.2661	.1736	.0581	.0308	.0216	7	.0637	.2287	-.0330	-.0046	.0274
10	-.0206	.1689	.0523	.0000	.0211	10	.2228	.2248	-.0206	-.0270	.0285
20	.4348	.2875	-.0271	-.0585	.0372	20	.5865	.3284	-.0659	-.0737	.0433
M = 0.85						M = 1.05					
-3	-.6794	.2420	-.0162	.0827	.0303	-3	-.5230	.2662	-.0687	.0604	.0323
-2	-.6163	.2269	-.0086	.0749	.0286	-2	-.4692	.2545	-.0691	.0539	.0308
-1	-.5621	.2198	.0044	.0685	.0273	-1	-.3966	.2348	-.0738	.0456	.0294
0	-.5358	.2181	.0091	.0660	.0271	0	-.3210	.2398	-.0668	.0368	.0290
1	-.4868	.2110	.0268	.0600	.0260	1	-.2702	.2412	.0038	.0309	.0288
2	-.4605	.2092	.0349	.0564	.0257	2	-.2194	.2383	.0003	.0250	.0287
3	-.4395	.2065	.0453	.0536	.0252	3	-.1758	.2346	-.0047	.0197	.0283
5	-.3730	.1941	.0593	.0451	.0235	5	-.0697	.2287	-.0160	.0074	.0275
7	-.2592	.1800	.0657	.0305	.0222	7	.0755	.2214	-.0303	-.0097	.0268
10	-.0017	.1711	.0567	-.0007	.0215	10	.2978	.2302	-.0577	-.0362	.0290
20	.4640	.2934	-.0313	-.0607	.0381	20	.5695	.2633	-.1075	-.0515	.0328
M = 0.90						M = 1.10					
-3	-.7064	.2569	-.0145	.0847	.0321	-3	-.5022	.2529	.0331	.0591	.0311
-2	-.6517	.2502	-.0043	.0790	.0310	-2	-.4506	.2408	.0234	.0526	.0295
-1	-.5953	.2443	.0084	.0726	.0301	-1	-.3809	.2303	.0115	.0450	.0282
0	-.5688	.2401	.0133	.0692	.0298	0	-.3111	.2281	.0052	.0373	.0276
1	-.5024	.2334	.0272	.0612	.0287	1	-.25343	.1575	.0728	.0305	.0274
2	-.4776	.2275	.0361	.0585	.0276	2	-.2065	.2281	-.0015	.0246	.0272
3	-.4361	.2208	.0420	.0531	.0267	3	-.1576	.2246	-.0069	.0187	.0269
5	-.3449	.2040	.0495	.0424	.0248	5	-.0600	.2175	-.0167	.0068	.0259
7	-.2122	.1872	.0540	.0259	.0229	7	.0795	.2126	-.0297	-.0105	.0253
10	.0365	.1813	.0513	-.0044	.0224	10	.2860	.2232	-.0555	-.0348	.0276
20	.2603	.2208	.0164	-.0366	.0287						

TABLE III.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Continued

(d) $x_S/c = 0.70$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-2	-.6333	.1924	.0629	.0781	.0238	-3	-.7748	.3038	.0637	.0917	.0336
-1	-.5865	.1868	.0688	.0726	.0230	-2	-.6716	.2476	.0536	.0795	.0317
0	-.5397	.1840	.0764	.0675	.0223	-1	-.5843	.2395	.0569	.0702	.0303
1	-.5094	.1826	.0826	.0636	.0220	0	-.5049	.2315	.0694	.0628	.0293
2	-.4708	.1812	.0890	.0586	.0213	1	-.4462	.2275	.0670	.0531	.0293
3	-.4295	.1756	.0949	.0536	.0210	2	-.4017	.2154	.0927	.0486	.0272
5	-.3194	.1645	.1059	.0402	.0193	3	-.3223	.2074	.0942	.0412	.0260
7	-.1955	.1575	.1184	.0251	.0181	5	-.1858	.1993	.1095	.0248	.0251
10	.0220	.1715	.1143	-.0006	.0199	7	.0032	.1953	.1051	.0032	.0245
20	.3497	.2941	.0560	-.0474	.0346	10	.2096	.2114	.0933	-.0232	.0269
						20	.4954	.3280	.0514	-.0628	.0261
M = 0.80						M = 1.00					
-3	-.7092	.2166	.0429	.0852	.0268	-3	-.6968	.2644	.0327	.0828	.0336
-2	-.6341	.2071	.0511	.0768	.0255	-2	-.6194	.2483	.0283	.0732	.0319
-1	-.5741	.1976	.0620	.0704	.0243	-1	-.5435	.2390	.0299	.0646	.0303
0	-.5215	.1957	.0748	.0639	.0231	0	-.4448	.2329	.0335	.0529	.0294
1	-.4690	.1900	.0781	.0586	.0231	1	-.3811	.2290	.0421	.0462	.0286
2	-.4259	.1843	.0870	.0536	.0223	2	-.3158	.2221	.0498	.0391	.0278
3	-.3658	.1805	.0952	.0468	.0216	3	-.2399	.2137	.0529	.0302	.0267
5	-.2345	.1691	.1056	.0308	.0202	5	-.0956	.2068	.0664	.0138	.0260
7	-.0901	.1653	.1103	.0137	.0197	7	.1017	.2091	.0644	-.0098	.0261
10	.1351	.1833	.0962	-.0141	.0223	10	.3294	.2367	.0576	-.0382	.0306
20	.3752	.2925	.0716	-.0494	.0355	20	.5496	.3443	.0330	-.0692	.0436
M = 0.85						M = 1.05					
-3	-.7241	.2246	.0474	.0874	.0278	-3	-.6743	.2560	.0358	.0789	.0161
-2	-.6400	.2113	.0504	.0775	.0264	-2	-.6002	.2376	.0310	.0701	.0152
-1	-.5716	.2068	.0668	.0697	.0250	-1	-.5202	.2266	.0302	.0616	.0145
0	-.5172	.1979	.0758	.0636	.0242	0	-.4476	.2200	.0335	.0530	.0139
1	-.4664	.1935	.0815	.0579	.0239	1	-.3604	.2156	.0351	.0436	.0137
2	-.4138	.1873	.0910	.0522	.0240	2	-.2950	.2119	.0443	.0362	.0133
3	-.3402	.1820	.0967	.0444	.0220	3	-.2165	.2030	.0498	.0274	.0127
5	-.2244	.1731	.1114	.0302	.0209	5	-.0770	.1986	.0612	.0109	.0123
7	-.0491	.1713	.1110	.0089	.0206	7	.1337	.2030	.0541	-.0144	.0126
10	.1560	.1917	.0980	-.0167	.0235	10	.3502	.2340	.0426	-.0407	.0149
20	.4857	.3000	.0505	-.0515	.0370	20	.4461	.2965	.0462	-.0560	.0181
M = 0.90						M = 1.10					
-3	-.7685	.2420	.0614	.0925	.0304	-3	-.6403	.2423	.0371	.0755	.0306
-2	-.6606	.2252	.0588	.0804	.0281	-2	-.5901	.2303	.0351	.0693	.0290
-1	-.5826	.2126	.0680	.0713	.0265	-1	-.5064	.2175	.0288	.0602	.0276
0	-.5278	.2084	.0833	.0649	.0257	0	-.4227	.2084	.0304	.0509	.0262
1	-.4747	.2059	.0886	.0599	.0257	1	-.3320	.2062	.0368	.0402	.0256
2	-.4199	.2000	.1004	.0532	.0250	2	-.2693	.1999	.0430	.0328	.0248
3	-.3535	.1958	.1071	.0461	.0240	3	-.2135	.1949	.0476	.0263	.0240
5	-.2241	.1874	.1246	.0313	.0231	5	-.0502	.1822	.0569	.0071	.0229
7	-.0349	.1773	.1157	.0071	.0217	7	.1284	.1949	.0527	-.0141	.0239
10	.1643	.1941	.0992	-.0178	.0242	10	.3446	.2246	.0373	-.0404	.0286
20	.4382	.3134	.0658	-.0562	.0391	20	.4143	.2740	.0459	-.0495	.0335

TABLE III. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-3 WING - Concluded

(e) $x_s/c = 0.90$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.7197	.2017	.1224	.0852	.0273	-3	-.8079	.2502	.1563	.0922	.0323
-2	-.6538	.1877	.1227	.0774	.0257	-2	-.6970	.2422	.1474	.0796	.0316
-1	-.5824	.1822	.1303	.0702	.0247	-1	-.5940	.2342	.1437	.0690	.0307
0	-.5274	.1752	.1288	.0635	.0239	0	-.5148	.2382	.1509	.0607	.0292
1	-.4835	.1738	.1270	.0579	.0236	1	-.8712	.2181	.2589	.0514	.0280
2	-.4258	.1724	.1364	.0518	.0226	2	-.6811	.2101	.2357	.0408	.0274
3	-.3708	.1655	.1388	.0451	.0216	3	-.4974	.2021	.2213	.0305	.0258
5	-.2253	.1558	.1372	.0278	.0200	5	-.1489	.1860	.1712	.0112	.0238
7	-.0632	.1558	.1339	.0100	.0195	7	.2851	.2021	.0937	-.0144	.0255
10	.2060	.1864	.1018	-.0234	.0229	10	.8332	.2422	-.0131	-.0504	.0314
20	.6455	.3644	-.0176	-.0863	.0473	20	.7920	.4138	-.0399	-.1044	.0535
M = 0.80						M = 1.00					
-3	-.7204	.2056	.1172	.0846	.0271	-3	-.8033	.2701	.1764	.0922	.0350
-2	-.6418	.1942	.1234	.0759	.0256	-2	-.7048	.2524	.1592	.0814	.0330
-1	-.5725	.1847	.1313	.0679	.0248	-1	-.5911	.2394	.1509	.0682	.0311
0	-.5052	.1790	.1336	.0603	.0242	0	-.5001	.2294	.1504	.0587	.0298
1	-.4472	.1762	.1345	.0539	.0233	1	-.4244	.2225	.1539	.0498	.0285
2	-.3779	.1696	.1374	.0463	.0226	2	-.3183	.2102	.1519	.0384	.0268
3	-.2975	.1610	.1392	.0368	.0214	3	-.2425	.2087	.1583	.0298	.0264
5	-.1366	.1535	.1427	.0186	.0203	5	-.0682	.2064	.1524	.0101	.0261
7	.0374	.1563	.1377	-.0011	.0203	7	.1516	.2179	.1245	-.0169	.0275
10	.3218	.1932	.0846	-.0372	.0253	10	.4168	.2624	.0874	-.0501	.0341
20	.7147	.3713	-.0264	-.0941	.0488	20	.8184	.4328	-.0343	-.1075	.0557
M = 0.85						M = 1.05					
-3	-.7344	.2142	.1181	.0858	.0281	-3	-.7892	.2637	.1782	.0897	.0340
-2	-.6470	.1983	.1204	.0751	.0265	-2	-.6891	.2438	.1650	.0788	.0317
-1	-.5701	.1912	.1296	.0670	.0255	-1	-.6021	.2306	.1698	.0697	.0299
0	-.4931	.0947	.1336	.0585	.0243	0	-.4860	.2203	.1479	.0559	.0287
1	-.4337	.1806	.1360	.0514	.0238	1	-.7834	.2093	.2456	.0456	.0267
2	-.3602	.1744	.1384	.0432	.0230	2	-.6296	.2034	.2273	.0368	.0256
3	-.2710	.1638	.1365	.0333	.0217	3	-.4497	.1998	.2071	.0273	.0252
5	-.1154	.1594	.1450	.0160	.0210	5	-.0435	.1990	.1412	.0044	.0248
7	.0595	.1673	.1405	-.0046	.0215	7	.3627	.2130	.0638	-.0059	.0269
10	.3427	.2045	.0926	-.0404	.0268	10	.8066	.2534	-.0189	-.0494	.0329
20	.7257	.3754	-.0280	-.0954	.0491	20	.7979	.4363	-.0056	-.1044	.0545
M = 0.90						M = 1.10					
-3	-.7700	.2238	.1233	.0883	.0301	-3	-.7521	.2517	.1736	.0861	.0323
-2	-.6657	.2113	.1241	.0940	.0279	-2	-.6685	.2320	.1690	.0771	.0300
-1	-.5796	.2029	.1273	.0671	.0268	-1	-.5850	.2193	.1608	.0678	.0283
0	-.5051	.1945	.1342	.0587	.0258	0	-.4944	.2066	.1555	.0573	.0269
1	-.4388	.1920	.1413	.0514	.0172	1	-.3816	.1967	.1451	.0452	.0251
2	-.3643	.1861	.1450	.0430	.0244	2	-.2786	.1918	.1446	.0333	.0244
3	-.2683	.1735	.1434	.0319	.0225	3	-.1922	.1897	.1456	.0240	.0238
5	-.0994	.1710	.1494	.0141	.0219	5	.0139	.1911	.1228	-.0006	.0236
7	.0911	.1769	.1350	-.0084	.0227	7	.1950	.2066	.0992	-.0223	.0259
10	.3643	.2113	.0864	-.0440	.0279	10	.3900	.2461	.0744	-.0474	.0313
20	.7535	.3873	-.0332	-.0997	.0509						

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING

(a) Plain Wing

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.2449	.0103	-.0101	.0285	.0016	-3	-.3383	.0343	.0196	.0397	.0034
-2	-.1612	.0083	-.0053	.0189	.0012	-2	-.2275	.0236	.0130	.0261	.0024
-1	-.0877	.0052	-.0009	.0105	.0009	-1	-.1225	.0148	.0062	.0140	.0015
0	-.0204	.0052	-.0006	.0022	.0007	0	-.0198	.0118	.0034	.0020	.0015
1	.0510	.0072	-.0013	-.0062	.0009	1	.1108	.0159	-.0033	-.0135	.0022
2	.1347	.0124	.0050	-.0158	.0014	2	.2275	.0195	-.0064	-.0271	.0030
3	.2265	.0186	.0146	-.0261	.0022	3	.3266	.0283	-.0144	-.0387	.0045
5	.3612	.0331	.0206	-.0422	.0045	5	.4935	.0532	-.0442	-.0589	.0086
7	.5142	.0630	.0200	-.0620	.0090	7	.6766	.0915	-.0761	-.0800	.0144
10	.6754	.1250	-.0290	-.0850	.0178						
20	.7571	.3099	-.0874	-.1011	.0421						
M = 0.80						M = 1.00					
-3	-.2978	.0189	-.0165	.0347	.0021	-3	-.3233	.0395	.0298	.0383	.0040
-2	-.1967	.0112	-.0101	.0227	.0014	-2	-.2140	.0282	.0178	.0253	.0028
-1	-.1108	.0070	-.0052	.0124	.0010	-1	-.1059	.0214	.0079	.0122	.0022
0	-.0139	.0049	-.0004	.0015	.0009	0	-.0056	.0186	.0030	.0007	.0021
1	.0803	.0070	.0070	-.0095	.0011	1	.1059	.0203	-.0032	-.0120	.0026
2	.1759	.0119	.0122	-.0204	.0018	2	.2062	.0265	-.0127	-.0247	.0036
3	.2811	.0175	.0187	-.0328	.0028	3	.3066	.0339	-.0223	-.0366	.0052
5	.4736	.0386	.0266	-.0550	.0064	5	.4571	.0553	-.0402	-.0539	.0085
7	.6371	.0736	.0190	-.0750	.0113	7	.6020	.0852	-.0653	-.0708	.0134
10	.8254	.1388	-.0054	-.1006	.0209						
M = 0.85						M = 1.05					
-3	-.3382	.0230	-.1118	.0388	.0024	-3	-.2945	.0380	.1276	.0345	.0039
-2	-.2081	.0132	-.1789	.0241	.0015	-2	-.2035	.0282	.1195	.0234	.0027
-1	-.1171	.0079	-.1471	.0132	.0009	-1	-.1071	.0217	.1095	.0117	.0022
0	-.0195	.0066	-.1133	.0024	.0010	0	-.0054	.0190	.1029	.0008	.0020
1	.0950	.0072	.1454	-.0109	.0012	1	.1178	.0222	-.1070	-.0132	.0026
2	.1912	.0119	.1845	-.0221	.0019	2	.2035	.0271	-.1151	-.0238	.0036
3	.3122	.0191	.1184	-.0360	.0033	3	.2892	.0342	-.1232	-.0340	.0050
5	.5203	.0441	.1459	-.0605	.0075	5	.4391	.0542	-.1396	-.0515	.0082
7	.6842	.0790	.1625	-.0807	.0129	7	.5784	.0868	-.1607	-.0686	.0131
M = 0.90						M = 1.10					
-3	-.3567	.0249	-.1052	.0410	.0027	-3	-.2801	.0368	.1283	.0330	.0037
-2	-.2398	.0143	-.1140	.0269	.0017	-2	-.1919	.0268	.1191	.0221	.0027
-1	-.1230	.0087	-.1082	.0138	.0010	-1	-.0830	.0210	.1077	.0098	.0021
0	-.0148	.0062	.1003	.0007	.0010	0	.0052	.0189	.1031	-.0006	.0020
1	.0984	.0081	.1098	-.0120	.0013	1	.0934	.0210	-.1040	-.0032	.0024
2	.2214	.0125	.1168	-.0254	.0023	2	.2075	.0273	-.1172	-.0240	.0035
3	.3444	.0230	.1066	-.0404	.0040	3	.2853	.0341	-.1237	-.0333	.0049
5	.5400	.0498	-.1307	-.0643	.0084	5	.4202	.0525	-.1375	-.0491	.0079
7	.7110	.0903	-.1622	-.0856	.0147	7	.5540	.0819	-.1588	-.0648	.0086

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(b) $x_S/c = 0.30$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60					
-3	-.3349	.1459	-.0911	.0364	.0200
-2	-.3329	.1387	-.0973	.0364	.0191
-1	-.3410	.1367	-.0993	.0376	.0187
0	-.3389	.1346	-.0975	.0367	.0189
1	-.3166	.1459	-.0929	.0336	.0196
2	-.2862	.1490	-.0871	.0290	.0199
3	-.2436	.1531	-.0905	.0213	.0201
5	-.1461	.1613	-.0897	.0080	.0212
7	-.0507	.1695	-.0880	-.0049	.0222
10	.1116	.1850	-.0872	-.0247	.0243
20	.5987	.3000	-.0772	-.0845	.0414
M = 0.80					
-3	-.4887	.1721	-.0744	.0576	.0234
-2	-.5093	.1721	-.0738	.0586	.0230
-1	-.5093	.1687	-.0845	.0584	.0225
0	-.4611	.1624	-.0857	.0521	.0221
1	-.4254	.1603	-.0854	.0469	.0220
2	-.3992	.1582	-.0734	.0431	.0218
3	-.3510	.1589	-.0677	.0368	.0219
5	-.2409	.1603	-.0733	.0224	.0221
7	-.0964	.1638	-.0847	.0046	.0228
10	.1583	.1763	-.0864	-.0272	.0244
20	.6539	.3066	-.0897	-.0883	.0429
M = 0.85					
-3	-.6049	.2041	-.0784	.0717	.0267
-2	-.5816	.1943	-.0779	.0680	.0253
-1	-.5493	.1832	-.0759	.0627	.0242
0	-.5066	.1754	-.0671	.0570	.0231
1	-.4549	.1708	-.0699	.0503	.0229
2	-.4136	.1701	-.0667	.0444	.0230
3	-.3490	.1688	-.0691	.0362	.0228
5	-.2391	.1668	-.0757	.0226	.0229
7	-.1060	.1695	-.0823	.0063	.0234
10	.1809	.1799	-.0906	-.0297	.0249
20	.6721	.3075	-.0938	-.0900	.0430
M = 0.90					
-3	-.6074	.2190	-.0506	.0719	.0280
-2	-.5683	.2048	-.0545	.0665	.0264
-1	-.5194	.1918	-.0560	.0595	.0249
0	-.4522	.1844	-.0565	.0517	.0242
1	-.4094	.1844	-.0510	.0459	.0241
2	-.3605	.1825	-.0558	.0390	.0242
3	-.3178	.1794	-.0597	.0333	.0239
5	-.1992	.1763	-.0759	.0184	.0240
7	-.0819	.1732	-.0889	.0035	.0239
10	.2017	.1856	-.0961	-.0316	.0254
M = 0.95					
-3	-.5039	.2211	-.0547	.0606	.0282
-2	-.4634	.2064	-.0619	.0544	.0265
-1	-.4112	.1941	-.0668	.0483	.0252
0	-.3382	.1888	-.0729	.0394	.0247
1	-.3012	.1877	-.0668	.0338	.0248
2	-.2548	.1877	-.0662	.0287	.0248
3	-.2143	.1877	-.0708	.0232	.0249
5	-.1216	.1847	-.0845	.0114	.0250
7	-.0174	.1847	-.0991	-.0026	.0251
10	.2433	.1935	-.1059	-.0356	.0263
M = 1.00					
-3	-.3898	.2186	-.0739	.0468	.0280
-2	-.3289	.2074	-.0851	.0394	.0269
-1	-.2768	.1979	-.0916	.0330	.0258
0	-.2104	.1934	-.0979	.0253	.0254
1	-.1439	.1940	-.0955	.0168	.0256
2	-.0997	.1962	-.0963	.0116	.0259
3	-.0443	.1990	-.1011	.0039	.0264
5	.0609	.2057	-.1176	-.0093	.0272
7	.1384	.2102	-.1287	-.0195	.0281
10	.4152	.2298	-.1450	-.0539	.0309
M = 1.05					
-3	-.3620	.2118	-.0735	.0432	.0267
-2	-.3087	.2005	-.0838	.0364	.0255
-1	-.2576	.1940	-.0902	.0306	.0248
0	-.1991	.1913	-.0967	.0233	.0245
1	-.1384	.1913	-.0942	.0155	.0244
2	-.0798	.1940	-.0944	.0087	.0245
3	-.0298	.1967	-.0994	.0024	.0248
5	.0639	.2032	-.1144	-.0091	.0257
7	.1597	.2129	-.1295	-.0217	.0272
10	.3832	.2269	-.1429	-.0497	.0297
M = 1.10					
-3	-.3506	.2073	-.0719	.0414	.0257
-2	-.3063	.1984	-.0793	.0362	.0246
-1	-.2475	.1905	-.0873	.0292	.0238
0	-.1856	.1864	-.0938	.0218	.0233
1	-.1237	.1879	-.0910	.0140	.0233
2	-.0691	.1905	-.0923	.0072	.0234
3	-.0278	.1932	-.0971	.0017	.0237
5	.0588	.1984	-.1100	-.0088	.0244
7	.1547	.2088	-.1215	-.0205	.0260
10	.3743	.2229	-.1400	-.0488	.0287

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(c) $x_S/c = 0.30$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.4652	.1705	-.0718	.0555	.0246	-3	-.5069	.2626	-.0741	.0615	.0339
-2	-.4734	.1715	-.0657	.0562	.0239	-2	-.4778	.2478	-.0772	.0400	.0322
-1	-.4591	.1736	-.0613	.0546	.0237	-1	-.4079	.2419	-.0860	.0496	.0314
0	-.4469	.1746	-.0669	.0521	.0240	0	-.3613	.2354	-.0792	.0439	.0309
1	-.4285	.1829	-.0478	.0490	.0246	1	-.3380	.2342	-.0717	.0400	.0306
2	-.4081	.1829	-.0480	.0456	.0247	2	-.3263	.2330	-.0652	.0377	.0221
3	-.3857	.1818	-.0454	.0468	.0246	3	-.2797	.2301	-.0695	.0333	.0302
5	-.3143	.1808	-.0534	.0313	.0243	5	-.2273	.2195	-.0708	.0262	.0292
7	-.2041	.1818	-.0673	.0171	.0246	7	-.1399	.2154	-.0808	.0156	.0287
10	-.0163	.1890	-.0835	-.0062	.0255	10	.0816	.2124	-.0978	-.0124	.0283
20	.4877	.2944	-.0890	-.0698	.0394	20	.5594	.3009	-.1212	-.0703	.0380
M = 0.80						M = 1.00					
-3	-.4706	.1955	-.0560	.0585	.0265	-3	-.4345	.2566	-.0832	.0539	.0334
-2	-.4775	.1962	-.0551	.0585	.0264	-2	-.3788	.2442	-.0959	.0454	.0321
-1	-.4872	.1962	-.0546	.0595	.0264	-1	-.3175	.2358	-.1034	.0383	.0310
0	-.4733	.1955	-.0482	.0572	.0262	0	-.2473	.2324	-.1033	.0303	.0306
1	-.4429	.1976	-.0404	.0528	.0265	1	-.2005	.2341	-.1036	.0239	.0308
2	-.4249	.1976	-.0356	.0499	.0266	2	-.1560	.2369	-.1018	.0186	.0312
3	-.4152	.1962	-.0286	.0480	.0263	3	-.1058	.2380	-.1066	.0129	.0314
5	-.3847	.1906	-.0230	.0429	.0255	5	-.0111	.2425	-.1209	.0008	.0315
7	-.2865	.1857	-.0403	.0292	.0251	7	.0780	.2453	-.1344	-.0071	.0320
10	-.0554	.1836	-.0679	.0000	.0252	10	.2507	.2453	-.1377	-.0317	.0325
20	.5398	.2978	-.1043	-.0734	.0405	20	.5236	.2764	-.1098	-.0545	.0344
M = 0.85						M = 1.05					
-3	-.5004	.2106	-.0577	.0609	.0281	-3	-.4067	.2482	-.0803	.0495	.0317
-2	-.5719	.2283	-.0536	.0682	.0297	-2	-.3607	.2384	-.0904	.0433	.0306
-1	-.5615	.2205	-.0549	.0674	.0290	-1	-.3050	.2303	-.0994	.0371	.0296
0	-.5264	.2139	-.0447	.0634	.0281	0	-.2333	.2249	-.1004	.0286	.0288
1	-.5004	.2139	-.0394	.0589	.0280	1	-.1894	.2276	-.0992	.0228	.0291
2	-.4329	.2053	-.0318	.0516	.0272	2	-.1424	.2303	-.1011	.0172	.0294
3	-.4419	.2053	-.0244	.0516	.0272	3	-.0931	.2330	-.1034	.0111	.0297
5	-.3965	.1987	-.0292	.0445	.0265	5	-.0107	.2357	-.1153	.0007	.0301
7	-.2938	.1922	-.0403	.0312	.0258	7	.0835	.2400	-.1283	-.0104	.0304
10	-.0390	.1823	-.0667	.0000	.0255	10	.2676	.2455	-.1410	-.0329	.0316
20	.5849	.3126	-.1201	-.0783	.0421						
M = 0.90						M = 1.10					
-3	-.5529	.2364	-.0685	.0678	.0311	-3	-.3888	.2430	-.0818	.0470	.0307
-2	-.5824	.2439	-.0565	.0702	.0316	-2	-.3463	.2346	-.0890	.0418	.0298
-1	-.5529	.2364	-.0512	.0661	.0309	-1	-.2955	.2273	-.0968	.0359	.0287
0	-.5136	.2327	-.0448	.0615	.0302	0	-.2281	.2215	-.0978	.0281	.0279
1	-.4854	.2289	-.0419	.0575	.0301	1	-.1711	.2257	-.0956	.0210	.0282
2	-.4546	.2246	-.0376	.0534	.0296	2	-.1296	.2283	-.0972	.0154	.0286
3	-.4116	.2208	-.0372	.0484	.0289	3	-.0778	.2309	-.1042	.0091	.0287
5	-.3342	.2115	-.0458	.0381	.0281	5	-.0031	.2336	-.1116	.0000	.0289
7	-.2359	.2034	-.0560	.0252	.0273	7	.0829	.2362	-.1247	-.0109	.0295
10	.0000	.1959	-.0738	-.0045	.0264	10	.2696	.2441	-.1350	-.0331	.0304
20	.6070	.3173	-.1288	-.0792	.0424						

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(d) $x_S/c = 0.30$; $\delta_S = -0.075$; $\delta_d/\delta_S = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.3927	.2071	-.0555	.0513	.0292	-3	-.8648	.2958	.1358	.0533	.0379
-2	-.3927	.2123	-.0499	.0504	.0300	-2	-.3915	.2869	-.0533	.0497	.0350
-1	-.3682	.2226	-.0414	.0470	.0309	-1	-.3623	.2869	-.0535	.0462	.0355
0	-.3784	.2309	-.0341	.0470	.0318	0	-.3214	.2692	-.0503	.0409	.0363
1	-.3620	.2299	-.0278	.0435	.0310	1	-.3623	.2781	-.0397	.0444	.0360
2	-.3682	.2278	-.0290	.0423	.0310	2	-.3389	.2751	-.0403	.0497	.0358
3	-.3579	.2278	-.0240	.0404	.0310	3	-.3272	.2674	-.0378	.0391	.0350
5	-.3477	.1646	-.0148	.0382	.0297	5	-.2863	.2544	-.0339	.0338	.0334
7	-.3150	.2143	-.0170	.0323	.0289	7	-.2220	.2426	-.0366	.0258	.0320
10	-.1800	.2092	-.0335	.0451	.0281	10	.0058	.2278	-.0482	-.0036	.0297
20	.3989	.2930	-.0931	-.0575	.0393	20	.5025	.2928	-.1152	-.0648	.0388
M = 0.80						M = 1.00					
-3	-.3372	.2178	-.0605	.0449	.0298	-3	-.3798	.2873	-.0651	.0459	.0360
-2	-.3192	.2213	-.0553	.0426	.0301	-2	-.3239	.2794	-.0667	.0396	.0356
-1	-.2914	.2283	-.0496	.0386	.0307	-1	-.2659	.2794	-.0707	.0331	.0355
0	-.3053	.2318	-.0401	.0390	.0314	0	-.2212	.2799	-.0744	.0277	.0359
1	-.3331	.2354	-.0314	.0407	.0318	1	-.1877	.2828	-.0793	.0229	.0358
2	-.3331	.2354	-.0256	.0411	.0314	2	-.1430	.2816	-.0840	.0178	.0361
3	-.3331	.2332	-.0189	.0407	.0311	3	-.1016	.2816	-.0886	.0127	.0358
5	-.3455	.2255	-.0062	.0401	.0303	5	-.0279	.2782	-.0976	.0034	.0353
7	-.3331	.2185	.0023	.0378	.0292	7	.0559	.2771	-.1079	-.0068	.0353
10	-.1832	.2037	-.0083	.0169	.0277	10	.2625	.2658	-.1089	-.0318	.0339
20	.4371	.2930	-.0948	-.0601	.0398	20	.3854	.2601	-.0818	-.0476	.0322
M = 0.85						M = 1.05					
-3	-.3271	.2243	-.0630	.0438	.0306	-3	-.3563	.2717	-.0623	.0457	.0342
-2	-.3128	.2243	-.0583	.0412	.0305	-2	-.3080	.1576	-.0681	.0379	.0337
-1	-.2776	.2309	-.0535	.0371	.0311	-1	-.2576	.2662	-.0680	.0318	.0336
0	-.2737	.2316	-.0446	.0359	.0312	0	-.2039	.2673	-.0721	.0263	.0337
1	-.2880	.2323	-.0384	.0369	.0312	1	-.1760	.2695	-.0761	.0219	.0337
2	-.3063	.2356	-.0277	.0384	.0313	2	-.1342	.2706	-.0809	.0170	.0337
3	-.3154	.2342	-.0192	.0396	.0312	3	-.0944	.2706	-.0850	.0117	.0336
5	-.3454	.2342	-.0048	.0410	.0308	5	-.0161	.2706	-.0971	.0021	.0334
7	-.3506	.2243	.0015	.0402	.0301	7	.0719	.2717	-.1026	-.0073	.0334
10	-.1694	.2046	-.0055	.0159	.0281	10	.2662	.2608	-.1113	-.0318	.0323
20	.4692	.3035	-.1052	-.0646	.0407	20	.3273	.2282	-.0619	-.0375	.0279
M = 0.90						M = 1.10					
-3	-.3167	.2290	-.0661	.0422	.0313	-3	-.3433	.1369	-.0667	.0421	.0335
-2	-.2958	.2309	-.0613	.0390	.0313	-2	-.2913	.1348	-.0671	.0364	.0329
-1	-.2687	.2352	-.0559	.0543	.0315	-1	-.2424	.1348	-.0691	.0305	.0329
0	-.2773	.2433	-.0445	.0551	.0322	0	-.1997	.1353	-.0717	.0253	.0330
1	-.2958	.2415	-.0358	.0378	.0322	1	-.1633	.1369	-.0741	.0206	.0332
2	-.3328	.2477	-.0242	.0422	.0328	2	-.1186	.1369	-.0787	.0153	.0328
3	-.3759	.2496	-.0146	.0472	.0332	3	-.0811	.1364	-.0826	.0104	.0326
5	-.3821	.2496	-.0095	.0455	.0330	5	.0052	.1364	-.0936	.0000	.0325
7	-.3044	.2359	-.0168	.0352	.0315	7	.0811	.1359	-.1013	-.0092	.0325
10	-.0986	.2134	-.0212	.0084	.0289	10	.2705	.1280	-.0998	-.0324	.0312
20	.5090	.3120	-.1170	-.0684	.0405	20	-.0104	.0026	-.0016	.0009	.0004

TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(e) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-2	-.6081	.1560	-.0567	.0724	.0203	-3	-.6181	.2427	-.0532	.0713	.0298
-1	-.5918	.1539	-.0426	.0686	.0198	-2	-.5598	.2249	-.0590	.0642	.0279
0	-.5550	.1508	-.0296	.0639	.0194	-1	-.5329	.2072	-.0505	.0624	.0253
1	-.5224	.1477	-.0270	.0585	.0192	0	-.4490	.2013	-.0541	.0518	.0250
2	-.4652	.1457	-.0278	.0515	.0191	1	-.3732	.1972	-.0413	.0426	.0250
3	-.4081	.1457	-.0256	.0442	.0190	2	-.3149	.1937	-.0306	.0441	.0245
5	-.2959	.1457	-.0220	.0295	.0188	3	-.2566	.1895	-.0310	.0289	.0239
7	-.1530	.1436	-.0195	.0119	.0188	5	-.1574	.1777	-.0202	.0172	.0226
10	.1836	.1539	-.0222	-.0276	.0200	7	.0175	.1748	-.0194	-.0039	.0222
20	.5734	.3006	-.0548	-.0807	.0331	10	.2974	.1777	-.0157	-.0379	.0234
						20	.6764	.2946	-.0765	-.0847	.0404
M = 0.80						M = 1.00					
-3	-.7947	.2054	-.0374	.0916	.0250	-3	-.5247	.2362	-.0688	.0618	.0287
-2	-.7476	.1963	-.0284	.0857	.0240	-2	-.4688	.2215	-.0746	.0550	.0271
-1	-.6853	.1829	-.0138	.0794	.0227	-1	-.4019	.2119	-.0828	.0477	.0260
0	-.6369	.1808	.0054	.0732	.0227	0	-.3237	.2034	-.0877	.0382	.0253
1	-.5870	.1724	.0042	.0669	.0217	1	-.2456	.2034	-.0816	.0290	.0255
2	-.5344	.1689	.0120	.0604	.0211	2	-.1820	.2034	-.0749	.0214	.0256
3	-.4707	.1619	.0139	.0522	.0206	3	-.1250	.2006	-.0719	.0151	.0252
5	-.3461	.1542	.0139	.0364	.0196	5	-.0112	.1961	-.0655	.0008	.0245
7	-.1661	.1451	.0105	.0152	.0188	7	.1395	.1905	-.0491	-.0165	.0240
10	.2215	.1528	-.0061	-.0322	.0202	10	.3851	.1950	-.0402	-.0468	.0256
20	.6022	.3056	-.0611	-.0819	.0408	20	.5693	.2769	-.0575	-.0706	.0347
M = 0.85						M = 1.05					
-3	-.7802	.2212	-.0285	.0805	.0266	-3	-.5094	.2280	-.0648	.0616	.0277
-2	-.7412	.2080	-.0276	.0850	.0252	-2	-.4558	.2156	-.0732	.0546	.0263
-1	-.6814	.1981	-.0106	.0783	.0240	-1	-.3915	.2047	-.0806	.0471	.0249
0	-.6137	.1916	.0025	.0706	.0235	0	-.3217	.1955	-.0858	.0398	.0239
1	-.5656	.1850	.0079	.0646	.0230	1	-.2359	.1955	-.0829	.0292	.0245
2	-.5071	.1817	.0113	.0569	.0228	2	-.1770	.1960	-.0757	.0218	.0246
5	-.3251	.1619	.0139	.0340	.0206	3	-.1180	.1949	-.0721	.0153	.0243
7	-.1560	.1521	.0123	.0146	.0195	5	-.0097	.1922	-.0648	.0015	.0238
10	.2276	.1560	-.0028	-.0322	.0207	7	.1501	.1857	-.0519	-.0170	.0226
20	.6397	.3120	-.0679	-.0860	.0415	10	.4183	.2020	-.0536	-.0491	.0265
M = 0.90						M = 1.10					
-3	-.7252	.2383	-.0290	.0845	.0286	-3	-.4936	.2236	-.0657	.0594	.0267
-2	-.6883	.2184	-.0289	.0794	.0261	-2	-.4344	.2094	-.0734	.0526	.0253
-1	-.6269	.2060	-.0280	.0719	.0248	-1	-.3741	.1994	-.0800	.0453	.0242
0	-.5347	.1998	-.0227	.0611	.0243	0	-.3066	.2168	-.0832	.0378	.0234
1	-.4671	.1966	-.0147	.0536	.0241	1	-.2338	.1920	-.0819	.0284	.0235
2	-.4204	.1885	-.0076	.0471	.0236	2	-.1611	.1920	-.0719	.0197	.0237
3	-.3626	.1823	-.0054	.0402	.0230	3	-.1143	.1899	-.0699	.0145	.0235
5	-.2335	.1736	-.0006	.0247	.0219	5	.0000	.1873	-.0640	.0003	.0231
7	-.0885	.1618	.0033	.0256	.0207	7	.1455	.1815	-.0503	-.0167	.0224
10	.2520	.1655	-.0039	-.0342	.0220	10	.4105	.1999	-.0517	-.0490	.0259
20	.6761	.3211	-.0780	-.0893	.0410						

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(f) $x_s/c = 0.50$; $\delta_s = -0.075$; $\delta_d/\delta_s = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.7088	.2005	-.0192	.0852	.0262	-3	-.6776	.2820	-.0478	.0792	.0390
-2	-.6804	.2005	-.0072	.0824	.0261	-2	-.6312	.2702	-.0509	.0737	.0333
-1	-.6296	.2005	.0021	.0760	.0259	-1	-.5570	.2585	-.0544	.0658	.0321
0	-.6052	.2056	.0150	.0723	.0261	0	-.4873	.2497	-.0340	.0579	.0311
1	-.5788	.2015	.0188	.0682	.0259	1	-.4467	.2455	-.0186	.0526	.0304
2	-.5484	.1974	.0234	.0642	.0253	2	-.4119	.2379	-.0014	.0482	.0296
3	-.5077	.1954	.0361	.0580	.0246	3	-.3481	.2350	-.0022	.0420	.0289
5	-.4387	.1851	.0405	.0488	.0236	5	-.2553	.2185	.0108	.0296	.0271
7	-.3290	.1748	.0445	.0349	.0223	7	-.1160	.2085	.0208	.0129	.0258
10	-.0305	.1676	.0371	-.0006	.0215	10	.1450	.2027	.0188	-.0286	.0256
20	.4021	.2879	-.0282	-.0577	.0370	20	.4235	.2761	-.0218	-.0542	.0346
M = 0.80						M = 1.00					
-3	-.7439	.2371	-.0293	.0880	.0298	-3	-.5988	.2790	-.0645	.0695	.0343
-2	-.6502	.2232	-.0205	.0785	.0281	-2	-.5433	.2666	-.0735	.0629	.0330
-1	-.5854	.2211	-.0087	.0708	.0275	-1	-.4823	.2543	-.0786	.0555	.0318
0	-.5469	.2197	.0018	.0658	.0273	0	-.3881	.2470	-.0767	.0367	.0311
1	-.5097	.2127	.0109	.0612	.0317	1	-.3215	.2470	-.0680	.0369	.0311
2	-.4711	.2057	.0215	.0563	.0260	2	-.2628	.2470	-.0599	.0302	.0311
3	-.4449	.2022	.0314	.0530	.0255	3	-.2085	.2442	-.0550	.0239	.0305
5	-.3885	.1953	.0505	.0457	.0245	5	-.1053	.2369	-.0482	.0116	.0296
7	-.2783	.1820	.0655	.0320	.0230	7	.0333	.2290	-.0355	-.0052	.0283
10	-.0055	.1702	.0603	-.0019	.0216	10	.2994	.2302	-.0294	-.0371	.0291
20	.4339	.2873	-.0283	-.0591	.0376	20	.3548	.2442	-.0035	-.0450	.0299
M = 0.85						M = 1.05					
-3	-.7633	.2489	-.0232	.0901	.0309	-3	-.5753	.2697	-.0633	.0670	.0334
-2	-.6909	.2338	-.0157	.0826	.0293	-2	-.5167	.2573	-.0725	.0604	.0320
-1	-.5822	.2260	-.0091	.0706	.0280	-1	-.4634	.2465	-.0768	.0539	.0306
0	-.5304	.2194	.0023	.0645	.0275	0	-.3888	.2378	-.0786	.0457	.0298
1	-.4981	.2181	.0178	.0600	.0271	1	-.3132	.2384	-.0687	.0360	.0300
2	-.4722	.2161	.0256	.0566	.0270	2	-.2557	.2384	-.0592	.0298	.0298
3	-.4528	.2129	.0396	.0547	.0264	3	-.2024	.2362	-.0539	.0240	.0295
5	-.4140	.2050	.0606	.0488	.0255	5	-.0959	.2292	-.0467	.0109	.0286
7	-.2846	.1880	.0729	.0328	.0234	7	.0426	.2211	-.0352	-.0060	.0276
10	.0039	.1768	.0655	-.0024	.0223	10	.3036	.2254	-.0327	-.0368	.0287
20	.4567	.2915	-.0302	-.0610	.0378						
M = 0.90						M = 1.10					
-3	-.7583	.2662	-.0206	.0904	.0325	-3	-.5473	.2614	-.0633	.0642	.0322
-2	-.7387	.2600	-.0115	.0772	.0319	-2	-.5008	.2494	-.0691	.0587	.0310
-1	-.6678	.2520	-.0065	.0786	.0312	-1	-.4440	.2378	-.0728	.0523	.0297
0	-.5993	.2477	.0119	.0720	.0305	0	-.3769	.2300	-.0750	.0444	.0289
1	-.5503	.2415	.0202	.0653	.0300	1	-.2736	.2326	-.0614	.0327	.0289
2	-.5075	.2365	.0296	.0602	.0294	2	-.2427	.2326	-.0569	.0287	.0289
3	-.4586	.2291	.0339	.0550	.0285	3	-.1807	.2290	-.0532	.0217	.0285
5	-.3608	.2124	.0460	.0424	.0264	5	-.0826	.2248	-.0450	.0097	.0275
7	-.2140	.1950	.0530	.0253	.0242	7	.0723	.2180	-.0332	-.0089	.0264
10	.0550	.1857	.0492	-.0084	.0232	10	.3098	.2243	-.0311	-.0380	.0280
20	.4892	.3034	-.0372	-.0643	.0388						

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(g) $x_S/c = 0.50$; $\delta_S = -0.075$; $\delta_d/\delta_S = 1.00$

α , deg	C_L	C_D	C_M	C_i	C_n	α , deg	C_L	C_D	C_M	C_i	C_n
M = 0.60						M = 0.95					
-3	-.5965	.2211	-.0179	.0758	.0295	-3	-.6245	.2974	-.0472	.0735	.0375
-2	-.4793	.2191	-.0169	.0609	.0295	-2	-.5320	.2974	-.0424	.0638	.0367
-1	-.4206	.2232	-.0110	.0536	.0295	-1	-.4799	.2916	-.0226	.0577	.0358
0	-.3963	.2242	.0001	.0512	.0293	0	-.4279	.2916	-.0094	.0515	.0362
1	-.3842	.2242	.0028	.0489	.0295	1	-.4001	.2763	.0086	.0480	.0346
2	-.3680	.2232	.0108	.0466	.0293	2	-.3770	.2717	.0177	.0454	.0338
3	-.3478	.2211	.0245	.0438	.0287	3	-.3585	.2635	.0305	.0436	.0334
5	-.3175	.2160	.0416	.0386	.0281	5	-.2880	.2506	.0513	.0352	.0317
7	-.2548	.2048	.0570	.0300	.0267	7	-.1561	.2389	.0589	.0197	.0303
10	-.0849	.1986	.0694	.0078	.0258	10	.0405	.2377	.0547	-.0053	.0295
20	.2447	.2754	.0349	-.0361	.0350	20	.2949	.2799	.0449	-.0390	.0354
M = 0.80						M = 1.00					
-3	-.5447	.2389	-.0393	.0670	.0309	-3	-.5857	.3077	.0470	.0694	.0387
-2	-.4665	.2334	-.0368	.0580	.0304	-2	-.5006	.2783	.0284	.0586	.0382
-1	-.4157	.2341	-.0267	.0517	.0304	-1	-.4045	.2976	.0220	.0480	.0378
0	-.3883	.2355	-.0161	.0980	.0303	0	-.3426	.2954	-.0518	.0408	.0377
1	-.3691	.2334	-.0066	.0459	.0303	1	-.3050	.2954	-.0441	.0358	.0375
2	-.3430	.2320	.0031	.0430	.0299	2	-.2564	.2943	-.0380	.0304	.0372
3	-.3224	.2306	.0150	.0405	.0296	3	-.2100	.2898	-.0349	.0245	.0367
5	-.2703	.2216	.0376	.0340	.0284	5	-.1127	.2786	-.0241	.0131	.0352
7	-.1921	.2112	.0566	.0236	.0269	7	.0442	.2708	-.0162	-.0045	.0339
10	-.0206	.2077	.0690	.0008	.0268	10	.2630	.2730	-.0143	.0321	.0348
20	.2566	.2771	.0453	-.0369	.0358	20	.2486	.2562	.0557	-.0323	.0317
M = 0.85						M = 1.05					
-3	-.5478	.2473	-.0439	.0672	.0319	-3	-.5585	.3032	-.0615	.0654	.0379
-2	-.4705	.2388	-.0407	.0580	.0311	-2	-.4778	.2903	-.0652	.0562	.0367
-1	-.4151	.2375	-.0322	.0517	.0308	-1	-.3886	.2849	-.0585	.0462	.0361
0	-.3867	.2375	-.0169	.0484	.0308	0	-.3238	.2838	-.0511	.0389	.0361
1	-.3674	.2375	-.0065	.0455	.0307	1	-.2867	.2849	-.0409	.0344	.0358
2	-.3390	.2356	.0047	.0423	.0305	2	-.2442	.2838	-.0386	.0291	.0356
3	-.3145	.2343	.0177	.0392	.0302	3	-.1943	.2784	-.0338	.0231	.0352
5	-.2668	.2271	.0399	.0331	.0291	5	-.0956	.2709	-.0261	.0115	.0337
7	-.1689	.2140	.0657	.0212	.0276	7	.0478	.2623	-.0157	-.0056	.0325
10	-.0129	.2121	.0733	-.0002	.0272	10	.2622	.2645	-.0146	.0318	.0334
20	.2746	.2800	.0486	-.0386	.0363	20	.2177	.2408	.0593	-.0294	.0291
M = 0.90						M = 1.10					
-3	-.5717	.2604	-.0482	.0686	.0334	-3	-.5245	.2905	-.0609	.0622	.0368
-2	-.4741	.2481	-.0491	.0580	.0322	-2	-.4494	.2791	-.0619	.0530	.0355
-1	-.4205	.2487	-.0336	.0515	.0320	-1	-.3713	.2249	-.0558	.0435	.0349
0	-.4035	.2493	-.0123	.0484	.0318	0	-.3137	.2749	-.0467	.0377	.0349
1	-.3693	.2481	-.0060	.0450	.0317	1	-.2633	.2759	-.0384	.0317	.0693
2	-.3474	.2462	.0083	.0422	.0313	2	-.2252	.2749	-.0341	.0270	.0688
3	-.3254	.2419	.0217	.0397	.0309	3	-.1707	.2707	-.0334	.0208	.0675
5	-.2743	.2333	.0465	.0335	.0297	5	-.0720	.2645	-.0210	.0088	.0648
7	-.1780	.2234	.0664	.0219	.0287	7	.0720	.2562	-.0142	-.0089	.0630
10	-.0195	.2215	.0760	.0013	.0283	10	.2756	.2624	-.0154	-.0336	.0652
20	.3084	.2913	.0427	-.0421	.0373	20	.2160	.2385	.0569	-.0285	.0569

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(h) $x_S/c = 0.70$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.8280	.1710	.0439	.0977	.0215	-3	-.7364	.2434	.0317	.0842	.0282
-2	-.7832	.1607	.0577	.0925	.0203	-2	-.6853	.2211	.0324	.0780	.0260
-1	-.7405	.1545	.0754	.0872	.0190	-1	-.6110	.2070	.0269	.0694	.0245
0	-.6897	.1463	.0842	.0810	.0185	0	-.5622	.2023	.0194	.0643	.0240
1	-.6408	.1442	.0856	.0752	.0182	1	-.3798	.1888	.0096	.0509	.0229
2	-.5798	.1360	.0868	.0677	.0173	2	-.3659	.1817	.0352	.0429	.0220
3	-.5188	.1339	.0936	.0600	.0166	3	-.2729	.1782	.0366	.0327	.0215
5	-.3784	.1236	.1006	.0430	.0153	5	-.1045	.1658	.0555	.0132	.0201
7	-.2034	.1133	.1011	.0220	.0141	7	.0987	.1658	.0607	-.0102	.0202
10	.1526	.1339	.0733	-.0189	.0167	10	.3694	.1964	.0500	-.0447	.0245
20	.5798	.3028	-.0113	-.0792	.0398						
M = 0.80						M = 1.00					
-2	-.8555	.1956	.0784	.0973	.0223	-3	-.6997	.2418	.0238	.0802	.0280
-1	-.8415	.1711	.0061	.0837	.0205	-2	-.6553	.2204	.0196	.0751	.0259
0	-.6347	.1642	.0834	.0648	.0198	-1	-.5776	.2075	.0099	.0653	.0247
1	-.5781	.1558	.0878	.0680	.0194	0	-.4942	.1957	.0071	.0566	.0235
3	-.4650	.1439	.1084	.0550	.0178	1	-.4165	.1884	.0039	.0473	.0231
5	-.3063	.1292	.1167	.0359	.0160	2	-.3088	.1850	.0073	.0358	.0228
7	-.1104	.1229	.1194	.0132	.0152	3	-.2255	.1799	.0157	.0262	.0220
10	.2304	.1460	.0860	-.0285	.0189	5	-.0522	.1726	.0319	.0069	.0211
20	.5864	.3025	-.0062	-.0778	.0384	7	.1833	.1754	.0346	-.0206	.0214
						10	.4276	.2064	.0183	-.0520	.0265
M = 0.85						M = 1.05					
-2	-.8421	.2000	.0711	.0953	.0235	-3	-.6877	.2335	.0225	.0791	.0274
-1	-.7462	.1895	.0757	.0847	.0225	-2	-.6236	.2146	.0143	.0718	.0257
0	-.6504	.1777	.0894	.0752	.0213	-1	-.5574	.2011	.0133	.0640	.0242
1	-.5817	.1771	.0971	.0678	.0212	0	-.4837	.1892	.0104	.0557	.0229
2	-.5182	.1672	.1026	.0601	.0202	1	-.4111	.1800	.0064	.0474	.0222
3	-.4495	.1541	.1109	.0528	.0189	2	-.3097	.1768	.0087	.0360	.0218
5	-.2682	.1377	.1236	.0313	.0169	3	-.2189	.1730	.0151	.0263	.0212
7	-.0518	.1312	.1183	.0067	.0162	5	-.0320	.1660	.0313	.0044	.0201
10	.2448	.1489	.0908	-.0303	.0193	7	.2029	.1724	.0265	-.0313	.0211
20	.5920	.2951	-.0081	-.0790	.0385	10	.4196	.2011	.0125	-.0513	.0257
M = 0.90						M = 1.10					
-2	-.7960	.2108	.0603	.0901	.0248	-3	-.6415	.2200	.0213	.0750	.0259
-1	-.7029	.1953	.1269	.0799	.0233	-2	-.5836	.2053	.0159	.0680	.0244
0	-.6001	.1860	.0637	.0689	.0222	-1	-.5008	.1880	.0117	.0577	.0227
1	-.4935	.1817	.0609	.0573	.0223	0	-.4449	.1797	.0099	.0514	.0219
2	-.4286	.1426	.0754	.0501	.0213	1	-.3621	.1723	.0101	.0420	.0211
3	-.3429	.1643	.0811	.0408	.0202	2	-.2587	.1702	.0110	.0310	.0209
5	-.1776	.1519	.0964	.0216	.0186	3	-.1811	.1645	.0184	.0223	.0200
7	.0490	.1488	.0970	-.0048	.0181	5	.0310	.1608	.0308	-.0028	.0194
10	.3123	.1693	.0871	-.0378	.0215	7	.2328	.1713	.0253	-.0272	.0210
20	.6319	.3088	-.0118	-.0830	.0396	10	.4428	.2043	.0071	-.0532	.0259

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(1) $x_S/c = 0.70$; $\delta_S = -0.075$; $\delta_d/b_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.7884	.2016	.0400	.0928	.0261	-1	-.6581	.2496	.0358	.0772	.0315
-2	-.7075	.1924	.0445	.0842	.0247	0	-.5311	.2437	.0221	.0628	.0308
-1	-.6206	.1873	.0513	.0750	.0238	1	-.4445	.2426	.0351	.0532	.0306
0	-.5701	.1842	.0566	.0695	.0235	2	-.3925	.2250	.0664	.0479	.0287
1	-.5317	.1811	.0631	.0639	.0229	3	-.2886	.2221	.0556	.0356	.0281
2	-.4872	.1791	.0692	.0593	.0225	5	-.1559	.2028	.0919	.0219	.0258
3	-.4447	.1740	.0793	.0538	.0219	7	.0496	.2063	.0857	-.0030	.0258
5	-.3336	.1648	.0925	.0400	.0206	10	.2540	.2233	.0789	-.0302	.0287
7	-.2022	.1545	.1037	.0246	.0194	20	.3925	.3039	.0678	-.0525	.0368
10	.0364	.1668	.1014	-.0037	.0136						
20	.3032	.2712	.0645	-.0443	.0344						
M = 0.80						M = 1.00					
-3	-.7730	.2158	.0206	.0898	.0267	-2	-.6955	.2599	.0242	.0807	.0323
-2	-.6853	.2047	.0323	.0804	.0255	-1	-.6182	.2454	.0244	.0718	.0347
-1	-.6099	.1978	.0422	.0725	.0248	0	-.5078	.2359	.0199	.0601	.0299
0	-.5482	.1936	.0539	.0656	.0241	1	-.4195	.2319	.0299	.0504	.0296
1	-.4893	.1887	.0632	.0590	.0238	2	-.3511	.2264	.0399	.0425	.0288
2	-.4413	.1839	.0696	.0533	.0235	3	-.2650	.2163	.0467	.0332	.0274
3	-.3906	.1804	.0809	.0479	.0229	5	-.1104	.2085	.0644	.0156	.0265
5	-.2467	.1672	.0915	.0304	.0213	7	.0994	.2096	.0617	-.0101	.0265
7	-.0411	.1645	.0945	.0069	.0209	10	.3643	.2431	.0467	-.0426	.0314
10	.1549	.1839	.0846	-.0192	.0238	20	.3754	.2795	.0715	-.0482	.0344
20	.3454	.2783	.0803	-.0479	.0359						
M = 0.85						M = 1.05					
-3	-.8316	.2294	.0389	.0955	.0280	-2	-.6685	.2508	.0262	.0787	.0312
-2	-.7003	.2118	.0346	.0818	.0263	-1	-.5942	.2363	.0257	.0707	.0297
-1	-.6205	.2033	.0408	.0736	.0256	0	-.4987	.2256	.0217	.0602	.0286
0	-.5497	.1988	.0521	.0652	.0251	1	-.3979	.2218	.0237	.0489	.0284
1	-.4956	.1968	.0618	.0593	.0252	2	-.3342	.2186	.0341	.0421	.0278
2	-.4377	.1909	.0735	.0530	.0243	3	-.2515	.2079	.0447	.0319	.0263
3	-.3733	.1844	.0865	.0460	.0236	5	-.0849	.2009	.0606	.0126	.0252
5	-.2317	.1727	.0989	.0290	.0221	7	.1538	.2057	.0528	-.0155	.0260
7	-.0129	.1701	.0963	.0031	.0216	10	.3554	.2363	.0432	-.0410	.0303
10	.1802	.1909	.0852	-.0219	.0246						
20	.3604	.2867	.0802	-.0503	.0367						
M = 0.90						M = 1.10					
-2	-.7912	.2095	.0592	.0922	.0299	-2	-.6306	.2407	.0299	.0751	.0298
-1	-.6939	.2403	.0665	.0824	.0299	-1	-.5649	.2272	.0267	.0668	.0285
0	-.5904	.2219	.0727	.0700	.0281	0	-.4724	.2184	.0227	.0567	.0275
1	-.5295	.2219	.0865	.0635	.0283	1	-.3852	.2158	.1221	.0468	.0272
2	-.4686	.2126	.0975	.0566	.0270	2	-.3081	.2111	.1143	.0390	.0264
3	-.3920	.2034	.1081	.0477	.0259	3	-.2363	.2028	.1032	.0306	.0252
5	-.2313	.1849	.1193	.0296	.0236	5	-.0411	.1976	.0688	.0083	.0243
7	-.0122	.1818	.1075	.0028	.0229	7	.1541	.2028	.0115	-.0151	.0251
10	.1765	.1984	.0953	.0026	.0255	10	.3574	.2340	-.0489	-.0404	.0296
20	.1643	.3106	.1275	-.0550	.0384						

TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(j) $x_s/c = 0.70$; $\delta_s = -0.075$; $\delta_d/\delta_s = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.6211	.2261	.0247	.0750	.0282	-2	-.6700	.2817	.0370	.0791	.0345
-2	-.5561	.2261	.0313	.0679	.0284	-1	-.5495	.2788	.0867	.0659	.0682
-1	-.5115	.2261	.0426	.0629	.0281	0	-.4683	.2670	.0506	.0571	.0333
0	-.4749	.2250	.0494	.0589	.0281	1	-.4046	.2670	.0789	.0500	.0333
1	-.4384	.2209	.0541	.0537	.0278	2	-.3408	.2494	.0724	.0430	.0325
2	-.3958	.2178	.0629	.0491	.0273	3	-.2655	.2465	.0671	.0342	.0308
3	-.3471	.2158	.0737	.0435	.0266	5	-.0997	.2406	.0545	.0166	.0316
5	-.2212	.2004	.0819	.0290	.0248	7	.0591	.2289	.0327	-.0037	.0284
7	-.0995	.1952	.0926	.0142	.0242	10	.2539	.2465	.0022	-.0294	.0311
10	.1340	.2189	.0818	-.0290	.0269	20	.4799	.3404	-.0252	-.0626	.0442
20	.3511	.3134	.0837	-.0475	.0393						
M = 0.80						M = 1.00					
-3	-.6318	.2314	.0067	.0751	.0292	-2	-.6516	.2918	.0293	.0765	.0365
-2	-.5630	.2265	.0195	.0672	.0284	-1	-.5197	.2816	.0267	.0630	.0354
-1	-.5052	.2230	.0299	.0607	.0282	0	-.4366	.2782	.0379	.0529	.0350
0	-.4419	.2230	.0431	.0542	.0278	1	-.3845	.2748	.0475	.0470	.0345
1	-.3978	.2174	.0465	.0490	.0278	2	-.3147	.2692	.0563	.0394	.0336
2	-.3497	.2160	.0578	.0433	.0273	3	-.2393	.2580	.0648	.0310	.0322
3	-.2946	.2112	.0668	.0364	.0267	5	-.0875	.2490	.0826	.0133	.0311
5	-.1500	.1986	.0774	.0207	.0253	7	.1119	.2524	.0753	-.0103	.0313
7	.0151	.1986	.0826	.0008	.0249	10	.3557	.2838	.0636	-.0408	.0357
10	.2147	.2230	.0702	-.0243	.0285	20	.4665	.3276	.0717	-.0600	.0385
20	.4488	.3345	.0678	-.0599	.0426						
M = 0.85						M = 1.05					
-3	-.6570	.2390	.0061	.0775	.0295	-2	-.6262	.2792	.0281	.0737	.0351
-2	-.5807	.2292	.0151	.0686	.0288	-1	-.5154	.2696	.0243	.0622	.0338
-1	-.4966	.2239	.0292	.0600	.0280	0	-.4302	.2684	.0316	.0526	.0333
0	-.4384	.2226	.0409	.0539	.0280	1	-.3557	.2642	.0466	.0444	.0328
1	-.3432	.2017	.2561	.0484	.0280	2	-.2971	.2598	.0537	.0371	.0322
2	-.3350	.2174	.0565	.0421	.0274	3	-.2204	.2490	.0608	.0287	.0310
3	-.2703	.2115	.0665	.0362	.0266	5	-.0628	.2426	.0756	.0108	.0299
5	-.1345	.2030	.0816	.0189	.0254	7	.1289	.2448	.0677	-.0123	.0304
7	.0440	.2030	.0788	-.0022	.0254	10	.3418	.2750	.0629	-.0398	.0344
10	.2380	.2292	.0671	-.0368	.0292	20	.4483	.3180	.0628	-.0584	.0310
20	.4772	.3254	.0677	-.0621	.0436						
M = 0.90						M = 1.10					
-3	-.7189	.2569	.0171	.0835	.0322	-2	-.6068	.2706	.0278	.0717	.0340
-2	-.6064	.2445	.0185	.0730	.0304	-1	-.4788	.2602	.0265	.0582	.0326
-1	-.5123	.2352	.0289	.0621	.0295	0	-.4014	.2570	.0340	.0493	.0320
0	-.4511	.2321	.0444	.0546	.0290	1	-.3292	.2538	.0476	.0406	.0315
1	-.3986	.2321	.0507	.0491	.0293	2	-.2673	.2476	.0556	.0336	.0307
2	-.3350	.2259	.0595	.0416	.0283	3	-.1744	.2404	.0635	.0238	.0296
3	-.2543	.2166	.0675	.0320	.0271	5	-.0196	.2372	.0730	.0053	.0288
5	-.1271	.2073	.0836	.0175	.0260	7	.1507	.2404	.0657	-.0158	.0296
7	.0562	.2117	.0806	-.0037	.0262	10	.3467	.2686	.0600	-.0397	.0336
10	.2518	.2352	.0670	-.0199	.0297						
20	.4964	.3528	.0652	-.0643	.0433						

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(k) $x_S/c = 0.90$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.50$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.8803	.1805	.1321	.1035	.0227	-2	-.7666	.2123	.1641	.0866	.0271
-2	-.7744	.1630	.1351	.0911	.0207	-1	-.6757	.1946	.1599	.0760	.0254
-1	-.6766	.1527	.1299	.0809	.0195	0	-.5534	.1828	.1553	.0645	.0240
0	-.6195	.1465	.1378	.0740	.0186	1	-.4544	.1793	.1503	.0538	.0236
1	-.5706	.1444	.1391	.0685	.0185	2	-.3379	.1604	.1498	.0414	.0211
2	-.5196	.1393	.1429	.0617	.0178	3	-.2214	.1622	.1526	.0289	.0211
3	-.4483	.1341	.1500	.0536	.0171	5	.0117	.1545	.1501	.0025	.0200
5	-.2853	.1228	.1528	.0338	.0149	7	.2621	.1722	.1155	-.0278	.0226
7	-.1019	.1186	.1528	.0136	.0142	10	.5243	.2182	.0732	-.0615	.0296
10	.1956	.1527	.1145	-.0235	.0185						
20	.5258	.3023	.0274	-.0728	.0315						
M = 0.80						M = 1.00					
-3	-.8984	.1973	.1245	.1025	.0236	-1	-.6459	.1973	.1562	.0752	.0253
-2	-.7657	.1749	.1221	.0880	.0215	0	-.5457	.1832	.1535	.0633	.0239
-1	-.6703	.1616	.1276	.0782	.0202	1	-.4399	.1720	.1513	.0518	.0225
0	-.5736	.1539	.1364	.0677	.0193	2	-.3118	.1624	.1410	.0379	.0212
1	-.5211	.1504	.1393	.0618	.0192	3	-.2005	.1596	.1461	.0261	.0208
2	-.4450	.1420	.1448	.0534	.0184	5	.0445	.1590	.1287	-.0107	.0205
3	-.3524	.1336	.1482	.0429	.0171	7	.2784	.1748	.0969	-.0306	.0229
5	-.1589	.1259	.1529	.0204	.0156	10	.5234	.2182	.0578	-.0621	.0295
7	.0968	.1308	.1371	-.0097	.0162						
10	.4077	.1679	.0651	-.0492	.0225						
20	.6772	.3345	-.0110	-.0885	.0428						
M = 0.85						M = 1.05					
-2	-.7794	.1776	.1326	.0893	.0220	-1	-.6103	.1881	.1546	.0715	.0238
-1	-.6625	.1631	.1300	.0768	.0206	0	-.5139	.1745	.1567	.0609	.0222
0	-.5715	.1545	.1382	.0669	.0198	1	-.4122	.1604	.1502	.0495	.0208
1	-.4936	.1473	.1482	.0581	.0192	2	-.3105	.1545	.1497	.0381	.0200
2	-.4027	.1401	.1528	.0482	.0182	3	-.1713	.1523	.1411	.0234	.0197
3	-.2988	.1302	.1528	.0363	.0169	5	.0889	.1545	.1123	-.0067	.0198
5	-.0935	.1250	.1587	.0136	.0159	7	.2784	.1707	.0832	-.0311	.0222
7	.1104	.1328	.1503	-.0111	.0170	10	.5086	.2119	.0483	-.0604	.0280
10	.4650	.1723	.0793	-.0555	.0238						
20	.7274	.3354	-.0165	-.0940	.0379						
M = 0.90						M = 1.10					
-2	-.4126	.2051	.0688	.0000	.0255	-1	-.5808	.1790	.1547	.0697	.0230
-1	-.6877	.1890	.1572	.0792	.0244	0	-.4926	.1680	.1537	.0590	.0217
0	-.5771	.1815	.1622	.0681	.0233	1	-.4097	.1575	.1481	.0497	.0204
1	-.4850	.1678	.1651	.0581	.0218	2	-.2956	.1486	.1495	.0372	.0194
2	-.3622	.1504	.1613	.0437	.0194	3	-.1607	.1449	.1397	.0210	.0189
3	-.2640	.1430	.1670	.0325	.0184	5	.1037	.1496	.1006	-.0080	.0190
5	-.0491	.1399	.1689	.0082	.0176	7	.2800	.1670	.0757	-.0309	.0176
7	.3929	.1492	-.0058	-.0213	.0190	10	.4926	.2074	.0437	-.0577	.0268
10	1.0192	.1865	-.1467	-.0599	.0258						

TABLE IV. - AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Continued

(1) $x_S/c = 0.90$; $\delta_S = -0.075$; $\delta_d/\delta_S = 0.75$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.7985	.2146	.1260	.0949	.0273	-1	-.6408	.2064	.1301	.0758	.0284
-2	-.7064	.1980	.1295	.0844	.0258	0	-.5709	.2359	.1596	.0689	.0320
-1	-.6224	.1866	.1346	.0756	.0245	1	-.4718	.2300	.1641	.0583	.0308
0	-.5569	.1835	.1381	.0685	.0240	2	-.3786	.2153	.1644	.0471	.0291
1	-.5119	.1804	.1381	.0629	.0238	3	-.2679	.2064	.1717	.0347	.0278
2	-.4402	.1741	.1429	.0551	.0229	5	-.0559	.1887	.1630	.0112	.0254
3	-.3685	.1690	.1528	.0464	.0221	7	.2015	.2064	.1294	-.0197	.0273
5	-.2129	.1565	.1498	.0283	.0206	10	.4777	.2359	.0905	-.0553	.0324
7	-.0307	.1555	.1461	.0078	.0205						
10	.3276	.1970	.0796	-.0377	.0253						
20	.6450	.3524	-.0098	-.0856	.0465						
M = 0.80						M = 1.00					
-3	-.8135	.2144	.1147	.0945	.0268	-1	-.6724	.2407	.1698	.0780	.0302
-2	-.7080	.1996	.1184	.0834	.0254	0	-.5722	.2266	.1633	.0675	.0290
-1	-.6108	.1898	.1283	.0732	.0244	1	-.4598	.2170	.1582	.0557	.0280
0	-.5275	.1827	.1346	.0637	.0237	2	-.3473	.2035	.1582	.0428	.0261
1	-.4650	.1785	.1368	.0568	.0231	3	-.2538	.2001	.1676	.0327	.0257
2	-.3818	.1708	.1401	.0473	.0224	5	-.0334	.1961	.1591	.0081	.0249
3	-.2846	.1630	.1447	.0361	.0212	7	.1859	.2085	.1275	-.0183	.0265
5	-.1027	.1546	.1465	.0167	.0205	10	.4264	.2525	.0976	-.0491	.0327
7	.1249	.1616	.1272	-.0110	.0211						
10	.4165	.2010	.0565	-.0485	.0271						
20	.3595	.1827	.0773	-.0920	.0458						
M = 0.85						M = 1.05					
-3	-.9306	.2059	.2751	.0575	.0267	-1	-.6634	.2297	.1758	.0781	.0303
-2	-.7820	.2243	.1372	.0913	.0286	0	-.5714	.2167	.1713	.0680	.0291
-1	-.6595	.2145	.1385	.0783	.0274	1	-.4579	.2075	.1606	.0560	.0280
0	-.5474	.2046	.1478	.0664	.0263	2	-.3402	.1972	.1575	.0431	.0265
1	-.3715	.1927	.1577	.0468	.0250	3	-.2429	.1939	.1649	.0325	.0261
2	-.2502	.1848	.1648	.0331	.0240	5	.0075	.1912	.1447	.0041	.0251
3	-.0326	.1795	.1662	.0093	.0234	7	.2119	.2069	.1159	-.0215	.0272
5	.2411	.2013	.1339	-.0242	.0258	10	.4248	.2475	.0882	-.0491	.0328
7	.5122	.2375	.0961	-.0594	.0318						
M = 0.90						M = 1.10					
-2	-.7521	.2153	.1339	.0872	.0272	-1	-.6449	.2215	.1752	.0764	.0293
-1	-.6288	.2054	.1322	.0740	.0262	0	-.5412	.2089	.1686	.0648	.0280
0	-.5252	.1960	.1375	.0628	.0254	1	-.4354	.2000	.1624	.0537	.0267
1	-.4389	.1929	.1461	.0536	.0249	2	-.3183	.1921	.1575	.0407	.0257
2	-.3329	.1779	.1454	.0420	.0232	3	-.2073	.1890	.1609	.0288	.0252
3	-.2355	.1716	.1501	.0309	.0224	5	.0311	.1884	.1355	.0008	.0248
5	-.0308	.1685	.1550	.0084	.0218	7	.2229	.2036	.1078	-.0229	.0268
7	.2158	.1841	.1340	-.0216	.0238	10	.4354	.2467	.0793	-.0503	.0324
10	.4993	.2278	.0900	-.0577	.0303						

TABLE IV.- AERODYNAMIC CHARACTERISTICS OF AN ASPECT-RATIO-4 WING - Concluded

(m) $x_S/c = 0.90$; $\delta_S = -0.075$; $\delta_d/\delta_S = 1.00$

α , deg	C_L	C_D	C_M	C_l	C_n	α , deg	C_L	C_D	C_M	C_l	C_n
M = 0.60						M = 0.95					
-3	-.7198	.2395	.1012	.0853	.0318	-2	-.6874	.2772	.1252	.0793	.0349
-2	-.6322	.2271	.1058	.0753	.0289	-1	-.5534	.2625	.1215	.0657	.0336
-1	-.5587	.2220	.1133	.0676	.0295	0	-.4544	.2566	.1299	.0554	.0332
0	-.4955	.2168	.1153	.0608	.0292	1	-.3786	.2507	.1326	.0466	.0311
1	-.4425	.2147	.1183	.0539	.0283	2	-.2621	.2389	.1302	.0337	.0303
2	-.3772	.2065	.1203	.0465	.0275	3	-.1689	.2271	.1370	.0236	.0299
3	-.3059	.2013	.1223	.0384	.0267	5	.0384	.2182	.1329	.0000	.0274
5	-.1529	.1941	.1280	.0202	.0256	7	.2621	.2418	.1049	-.0275	.0311
7	.0265	.2013	.1253	-.0006	.0260	10	.5126	.2831	.0733	-.0606	.0367
10	.3405	.2416	.0597	-.0403	.0307						
20	.6831	.4057	-.0309	-.0899	.0523						
M = 0.80						M = 1.00					
-3	-.6943	.2311	.0823	.0837	.0295	-2	-.6905	.2853	.1376	.0801	.0357
-2	-.6224	.2192	.0936	.0732	.0285	-1	-.5513	.2706	.1240	.0657	.0346
-1	-.5256	.2101	.1033	.0631	.0275	0	-.4455	.2622	.1254	.0542	.0338
0	-.4495	.2045	.1066	.0536	.0272	1	-.3564	.2582	.1301	.0454	.0327
1	-.3969	.2038	.1118	.0475	.0270	2	-.2561	.2458	.1320	.0327	.0312
2	-.3153	.1989	.1177	.0381	.0262	3	-.1559	.2447	.1432	.0225	.0308
3	-.2075	.1898	.1158	.0267	.0251	5	.0724	.2424	.1262	-.0034	.0307
5	-.0553	.1869	.1238	.0090	.0245	7	.2895	.2605	.0966	-.0300	.0336
7	.1632	.2003	.1043	-.0166	.0261	10	.5234	.3112	.0663	-.0604	.0403
10	.4163	.2451	.0455	-.0503	.0323						
20	.7220	.4089	-.0363	-.0936	.0528						
M = 0.85						M = 1.05					
-2	-.6300	.2236	.0922	.0741	.0290	-2	-.6743	.2753	.1455	.0786	.0342
-1	-.5326	.2170	.1031	.0638	.0283	-1	-.5673	.2617	.1264	.0669	.0334
0	-.4611	.2104	.1080	.0545	.0279	0	-.4388	.2536	.1208	.0539	.0322
1	-.3962	.2104	.1144	.0470	.0277	1	-.3372	.2476	.1281	.0433	.0313
2	-.2949	.2019	.1199	.0361	.0264	2	-.2408	.2357	.1285	.0316	.0300
3	-.2078	.1953	.1191	.0259	.0256	3	-.1359	.2335	.1347	.0200	.0297
5	-.0195	.1920	.1271	.0051	.0251	5	.0963	.2373	.1130	-.0068	.0298
7	.1884	.2071	.1021	-.0197	.0269	7	.3050	.2574	.0865	-.0324	.0328
10	.4416	.2499	.0458	-.0527	.0331	10	.5084	.3045	.0586	-.0592	.0390
20	.7404	.4169	-.0406	-.0958	.0534						
M = 0.90						M = 1.10					
-2	-.6439	.2345	.0959	.0753	.0304	-2	-.6534	.2609	.1409	.0777	.0332
-1	-.5406	.2239	.1035	.0643	.0290	-1	-.5393	.2468	.1301	.0646	.0318
0	-.4485	.2190	.1138	.0532	.0286	0	-.3962	.2389	.1194	.0495	.0307
1	-.3748	.2177	.1203	.0454	.0285	1	-.2852	.2310	.1211	.0427	.0293
2	-.2728	.2053	.1197	.0333	.0270	2	-.1919	.2273	.1300	.0265	.0288
3	-.1782	.2003	.1227	.0230	.0261	3	-.0830	.2258	.1294	.0140	.0284
5	.0184	.2003	.1302	.0007	.0261	5	.1452	.2326	.1008	-.0125	.0292
7	.2371	.2196	.0977	-.0254	.0284	7	.3059	.2520	.0788	-.0328	.0318
10	.4854	.2613	.0513	-.0587	.0346	10	.5030	.2609	.0552	-.0585	.0189

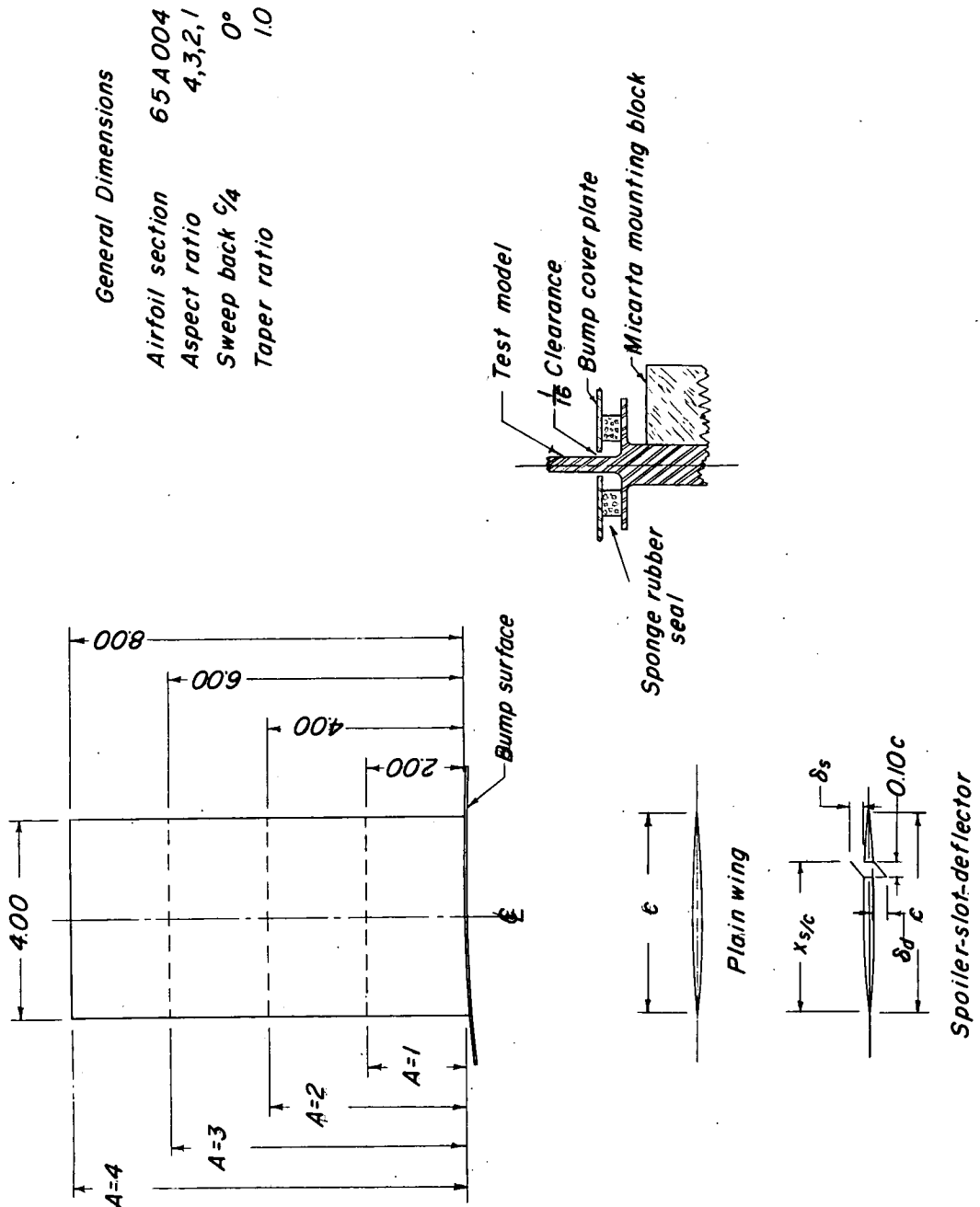


Figure 1.- Geometric characteristics of models used in investigation. All dimensions in inches unless otherwise noted.

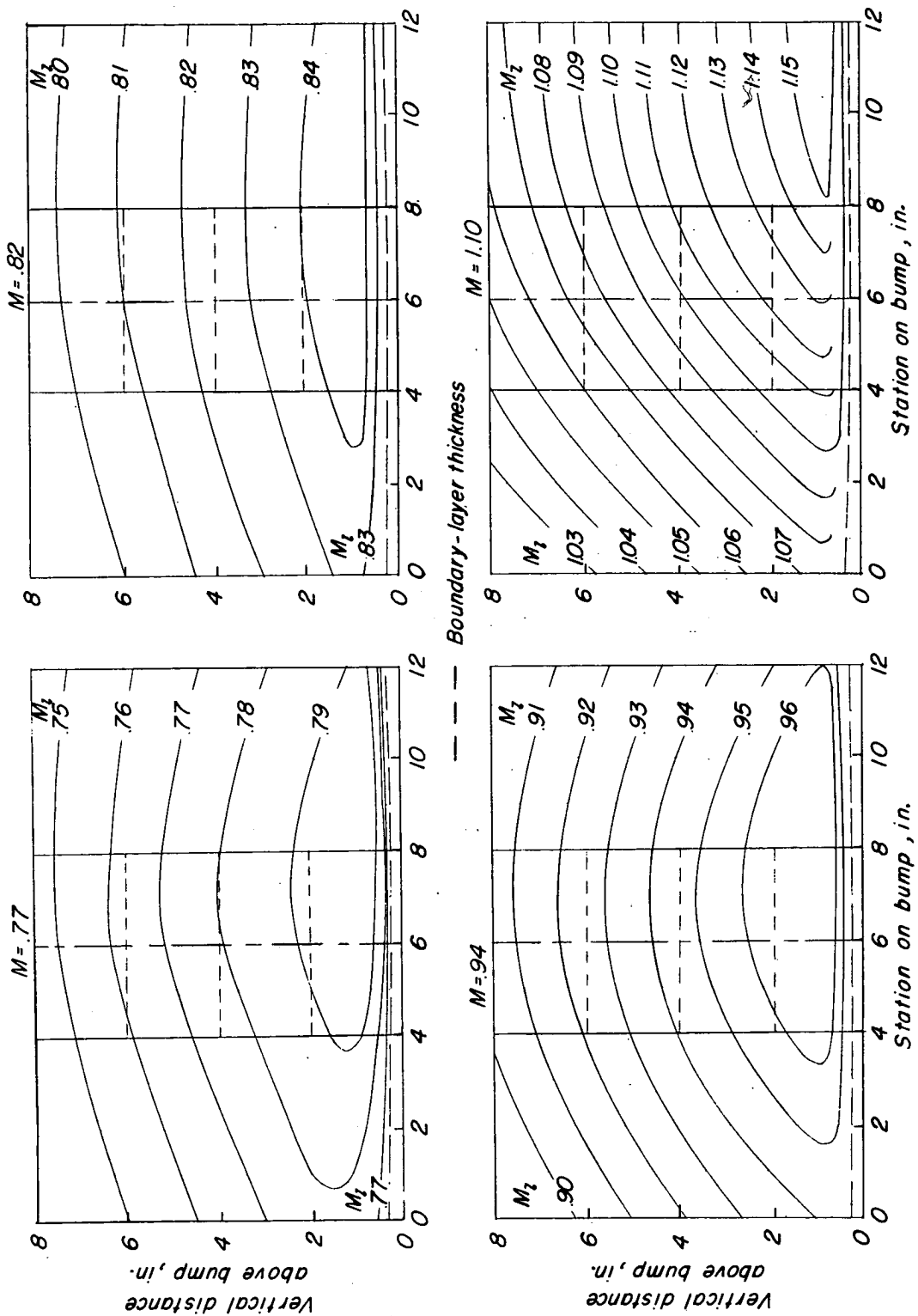


Figure 2.- Typical Mach number contours over transonic bump in region of model location.

0371228.1030

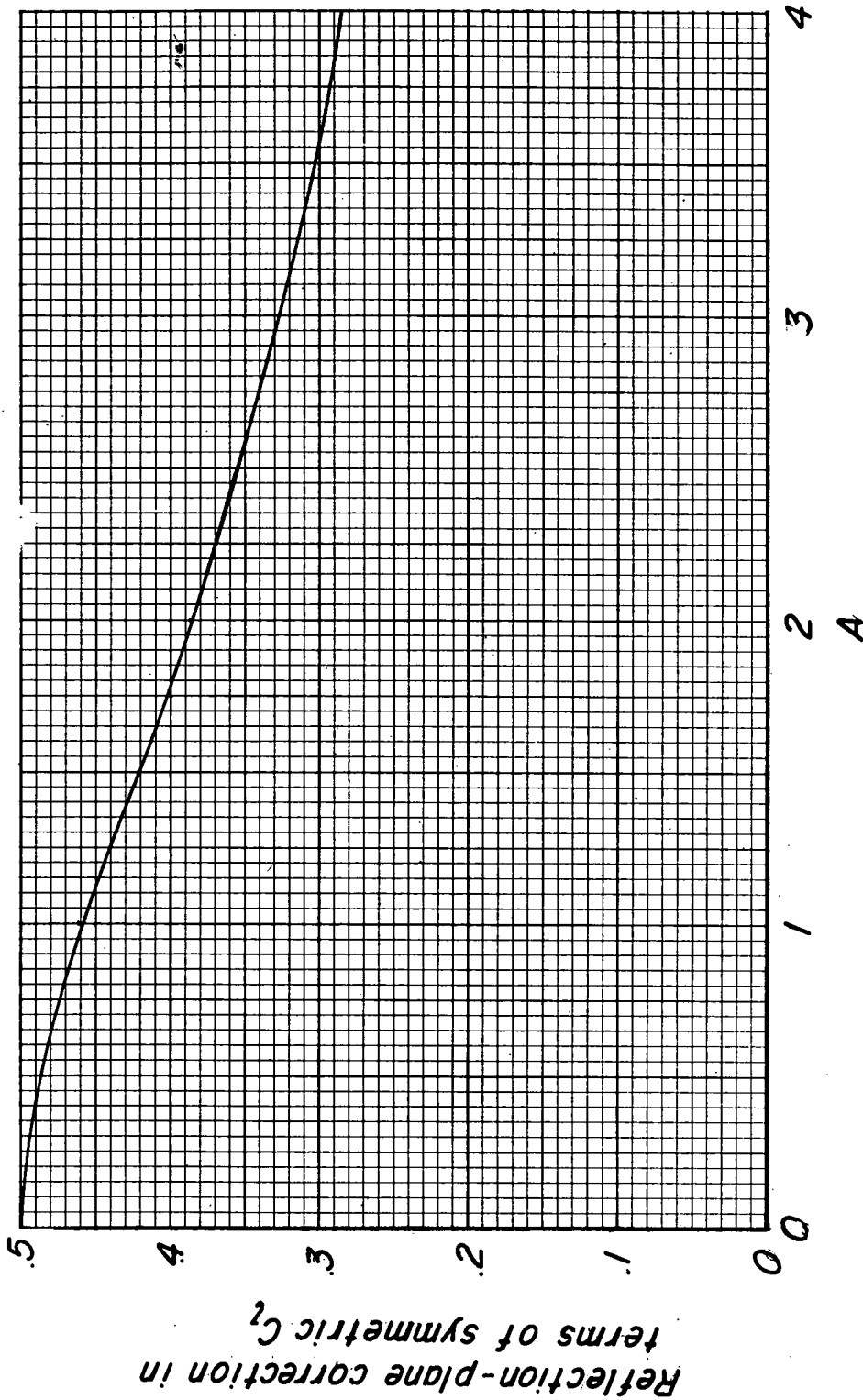
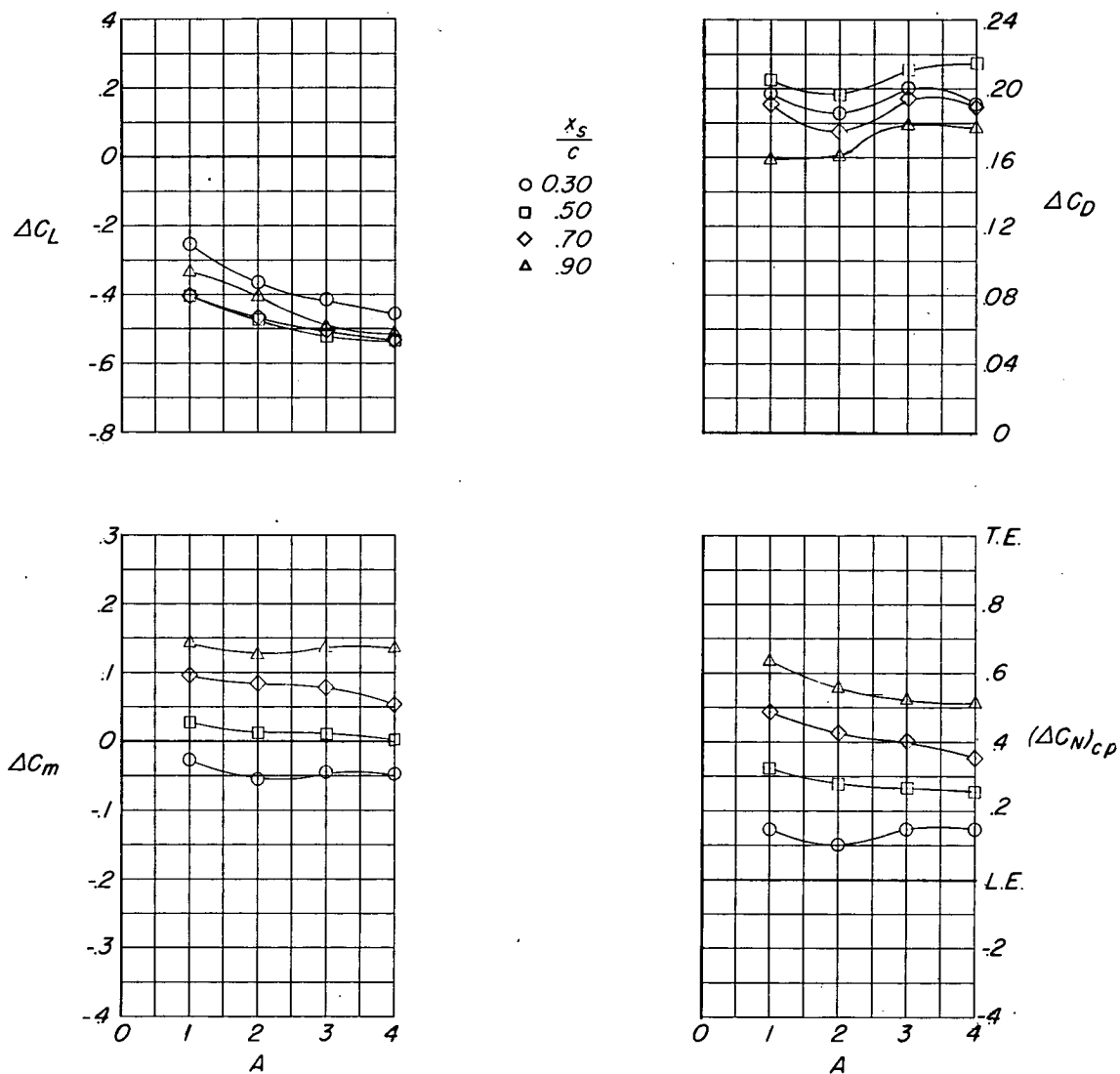


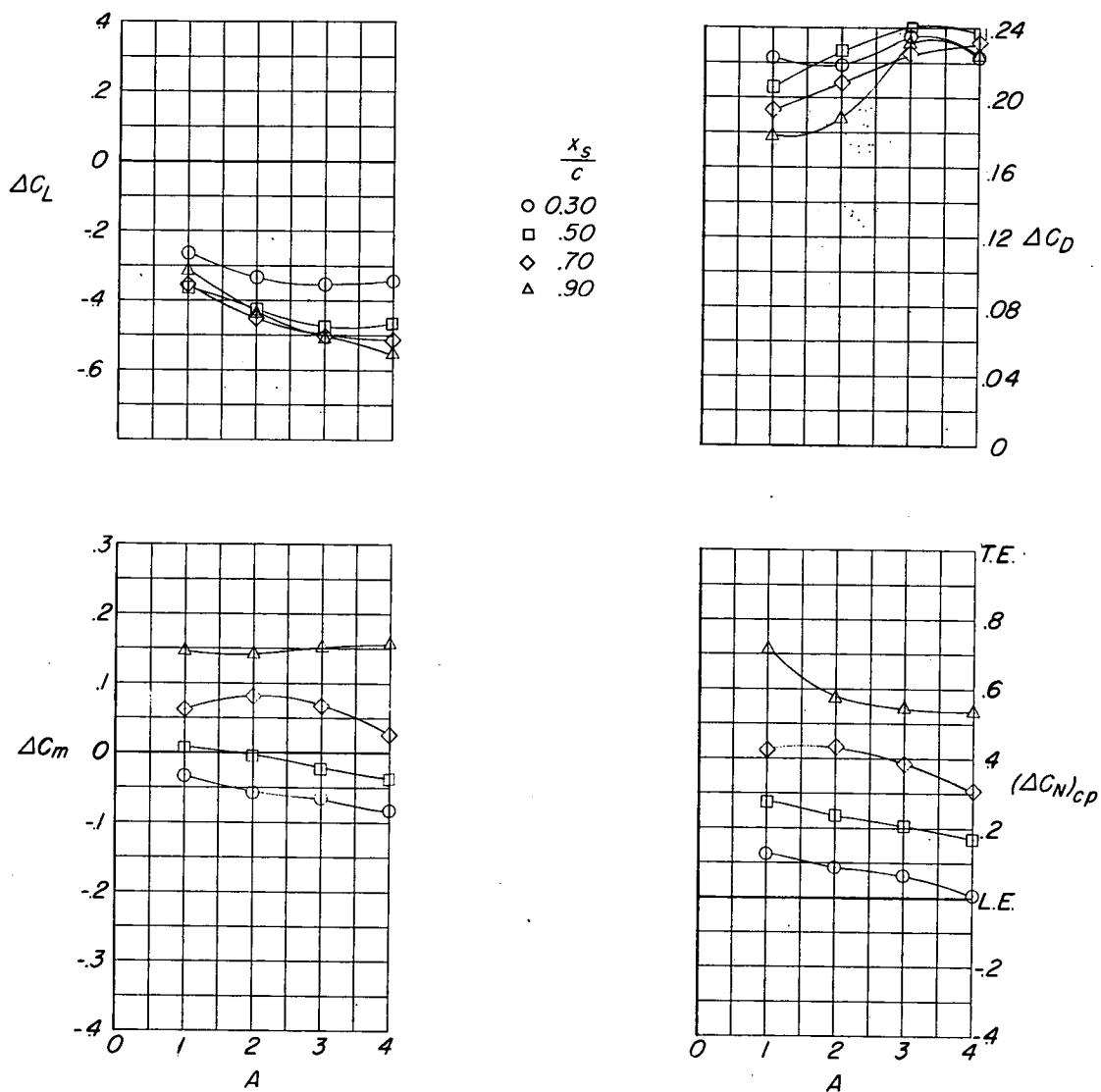
Figure 3.- Variation of reflection-plane correction with aspect ratio for full-span controls on untapered unswept wings.



(a) $M = 0.80$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

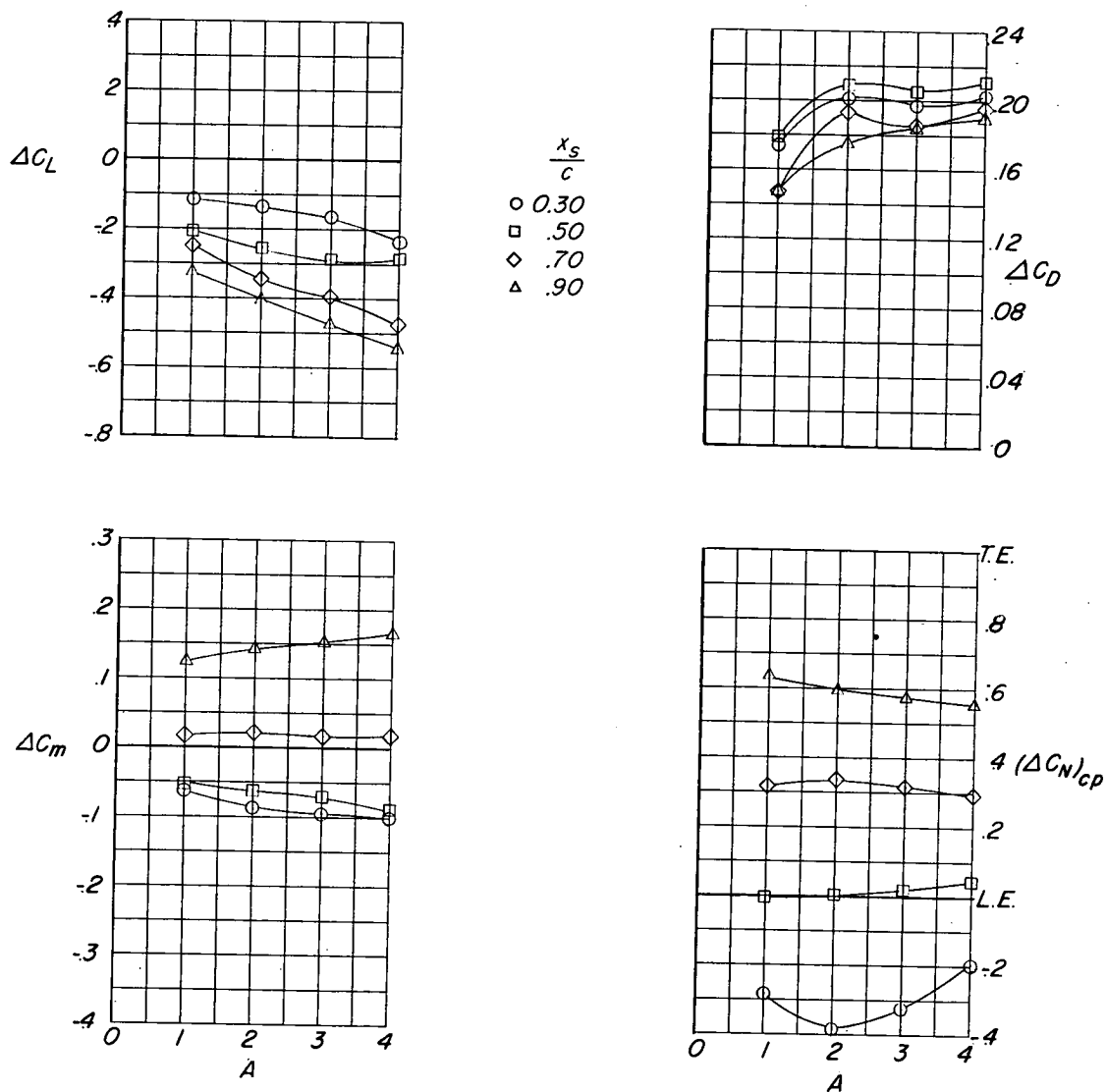
Figure 4.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with aspect ratio at an angle of attack of 0° for various chordwise positions of the spoiler-slot-deflector configuration.

0371224.1030



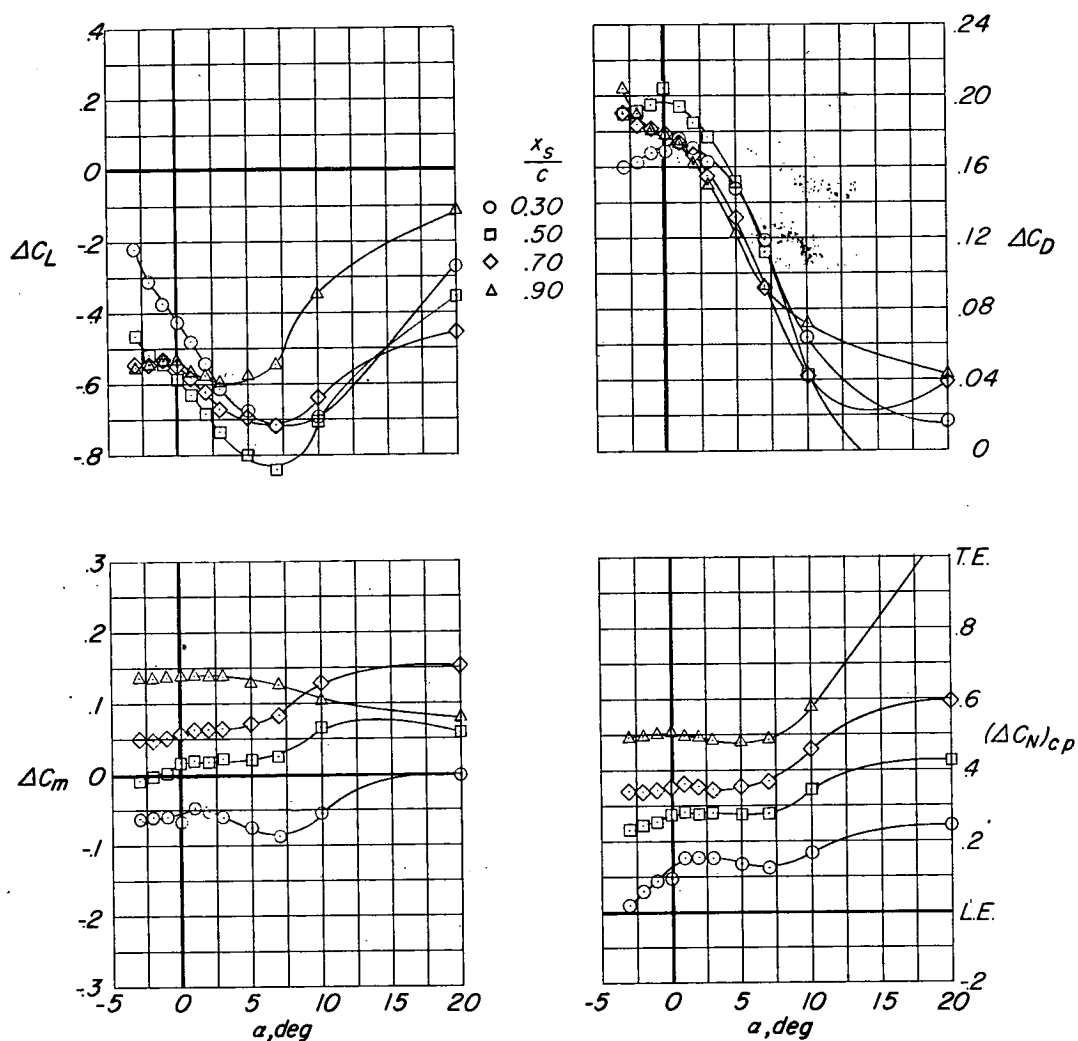
(b) $M = 0.95$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 4.- Continued.



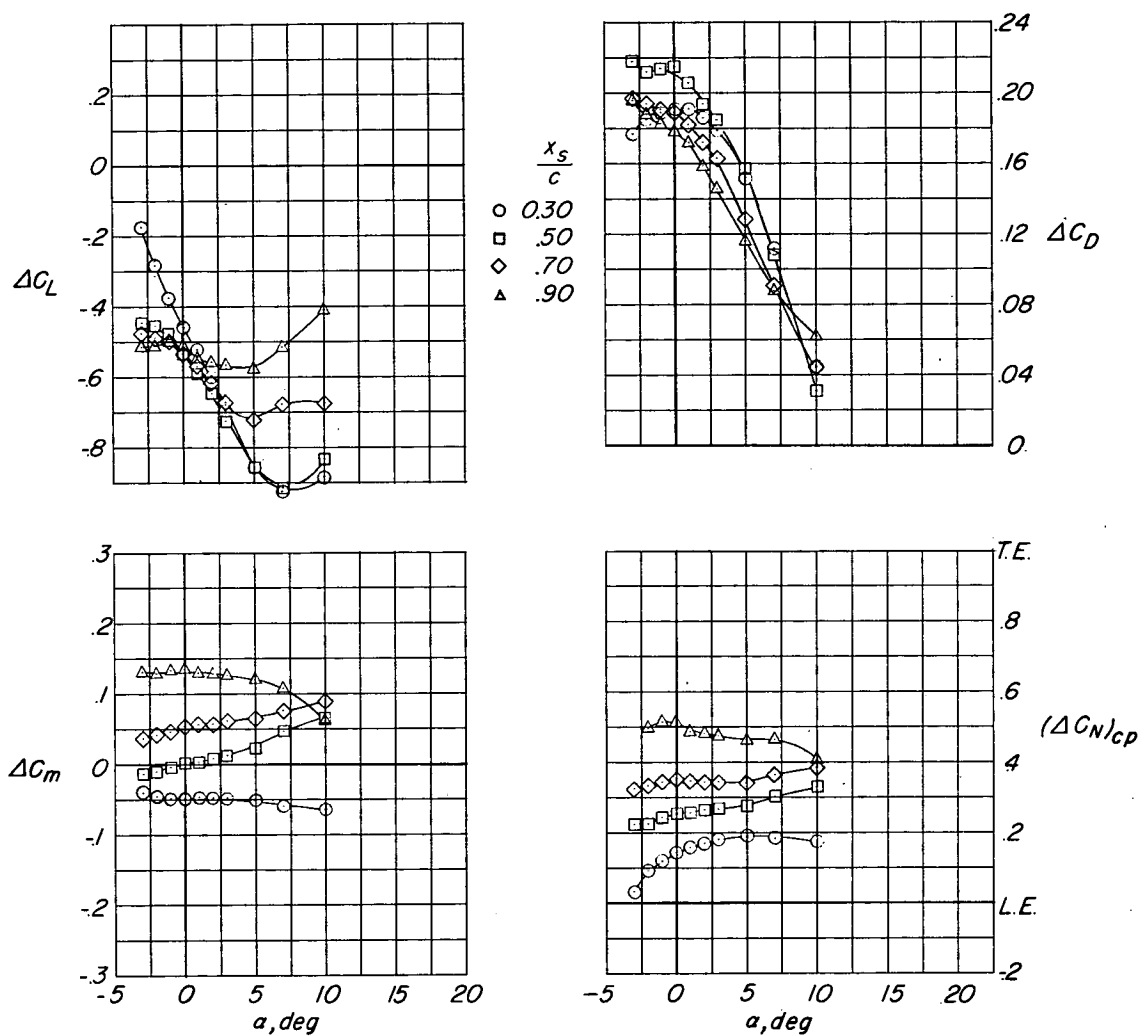
(c) $M = 1.10$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 4.- Concluded.



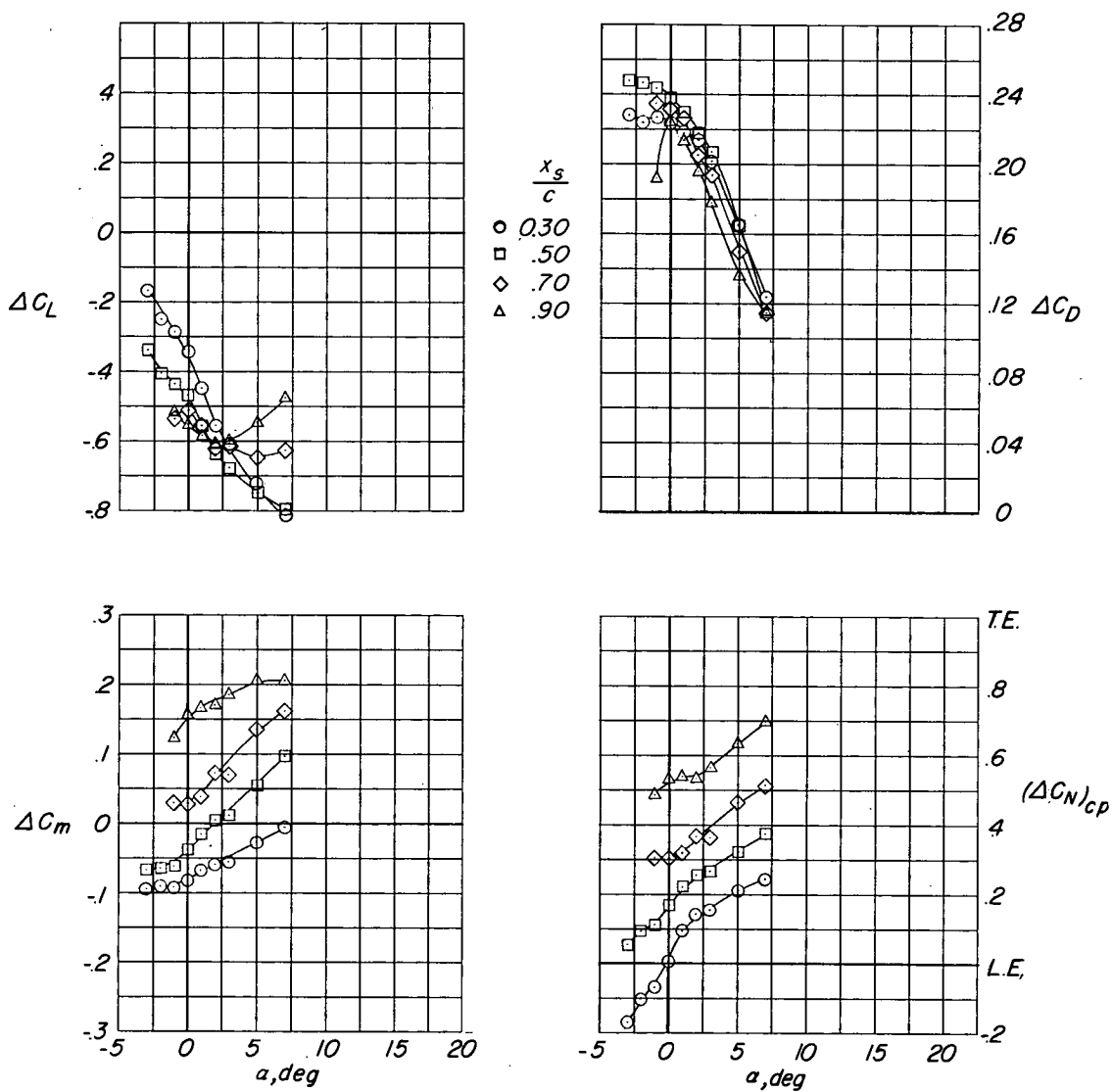
(a) $M = 0.60$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 5.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with angle of attack for the aspect-ratio-4 model for various chordwise positions of the spoiler-slot-deflector configuration.



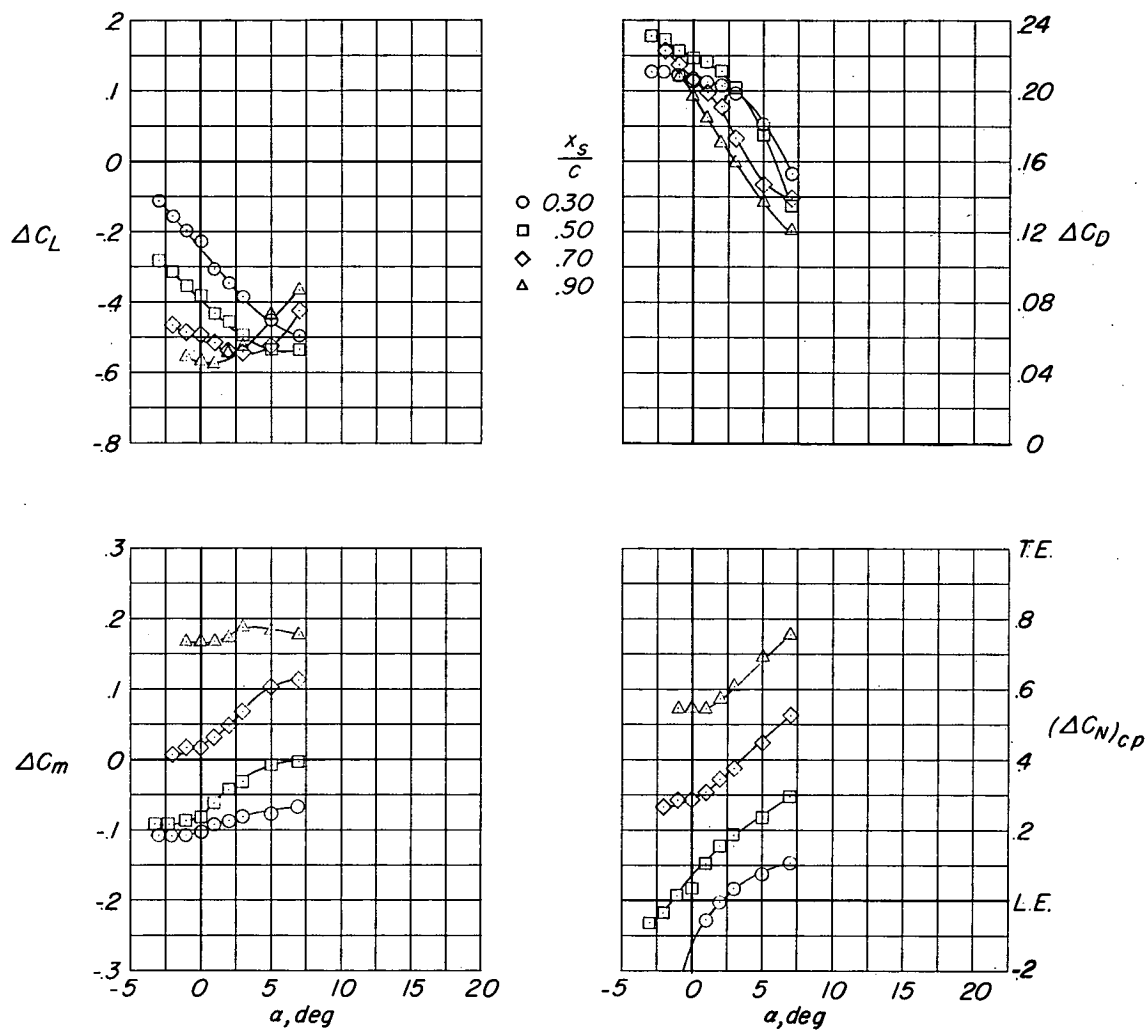
(b) $M = 0.80$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 5.- Continued.



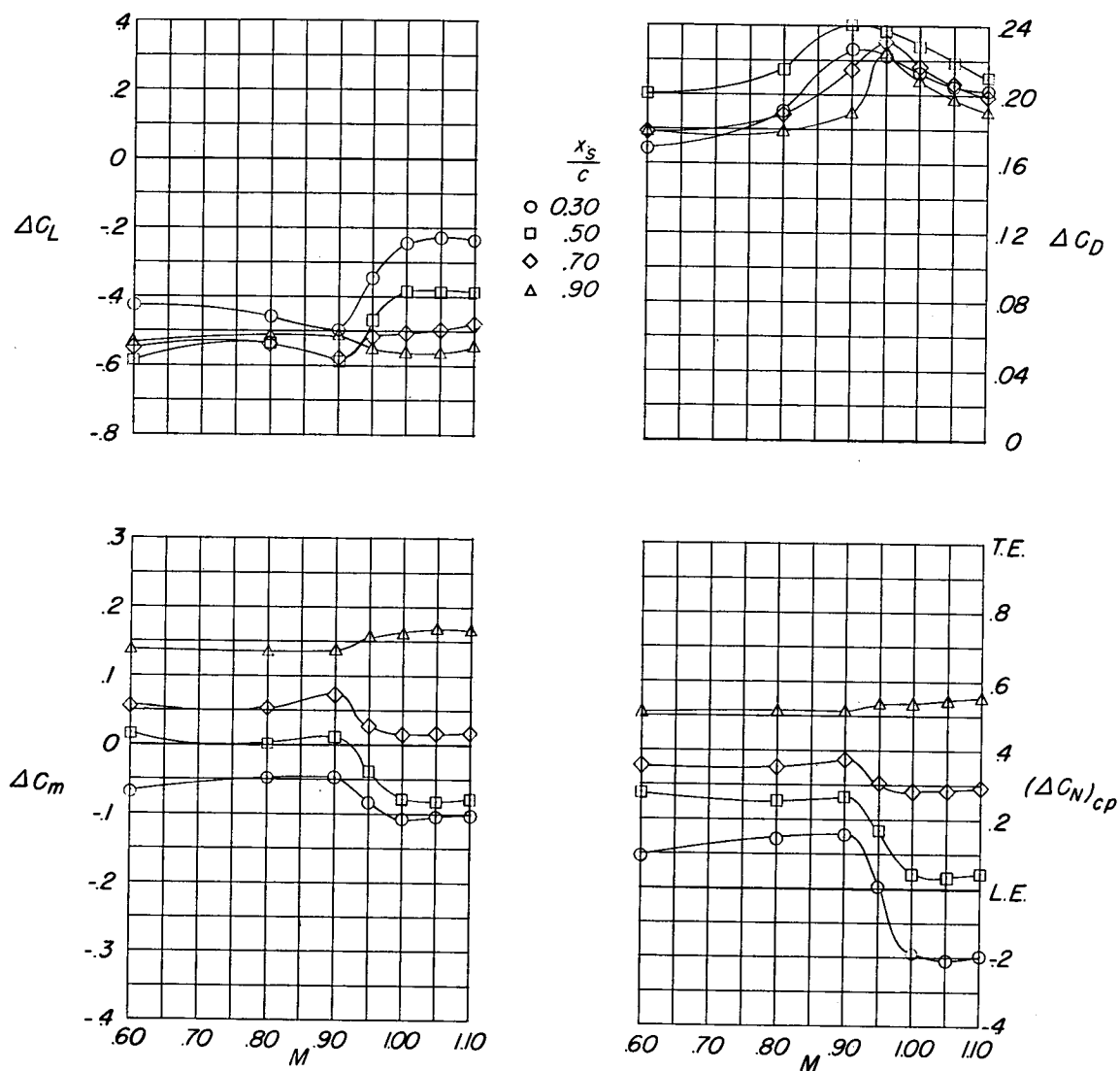
(c) $M = 0.95$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 5.- Continued.



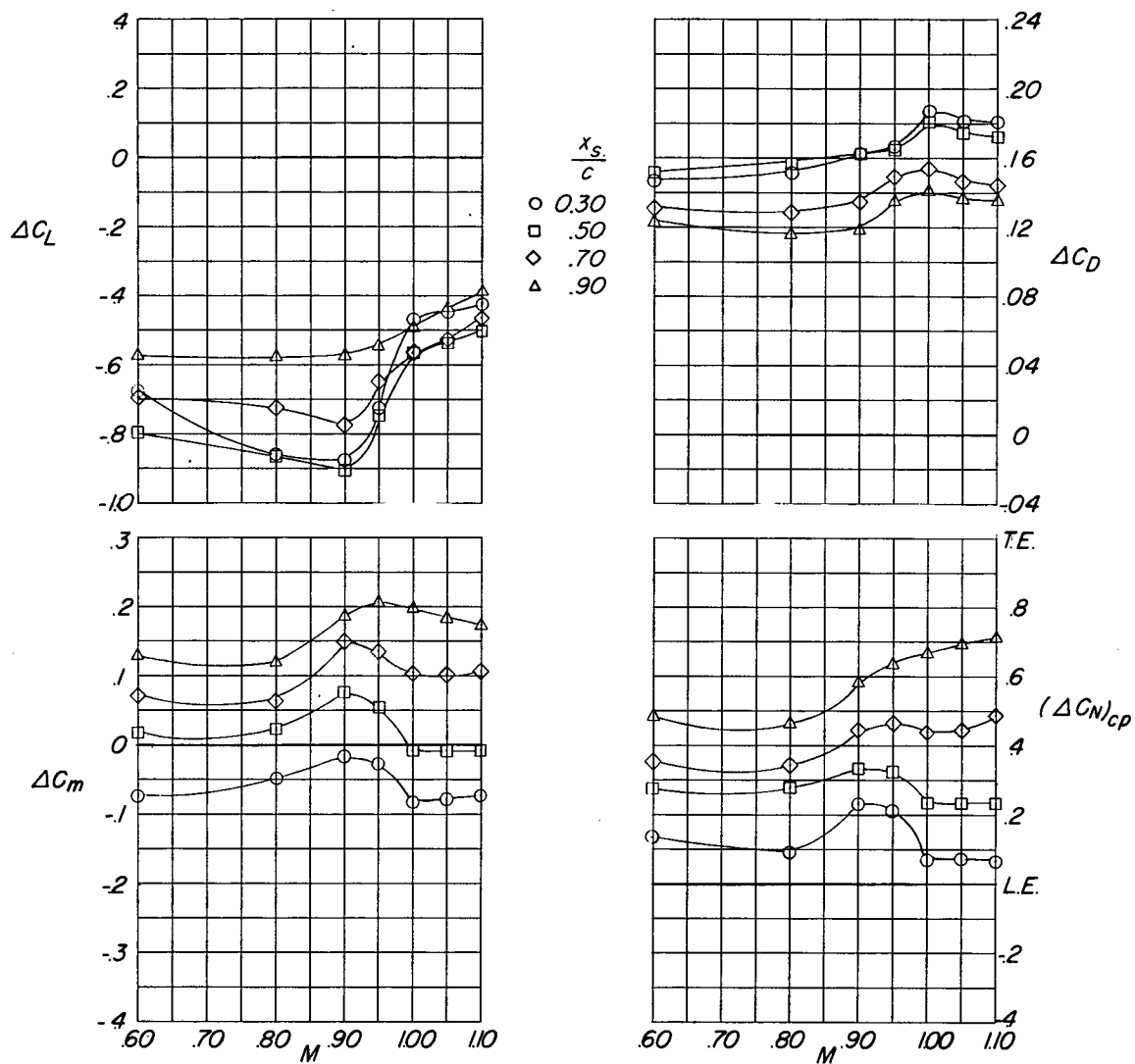
(d) $M = 1.05$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 5.- Concluded.



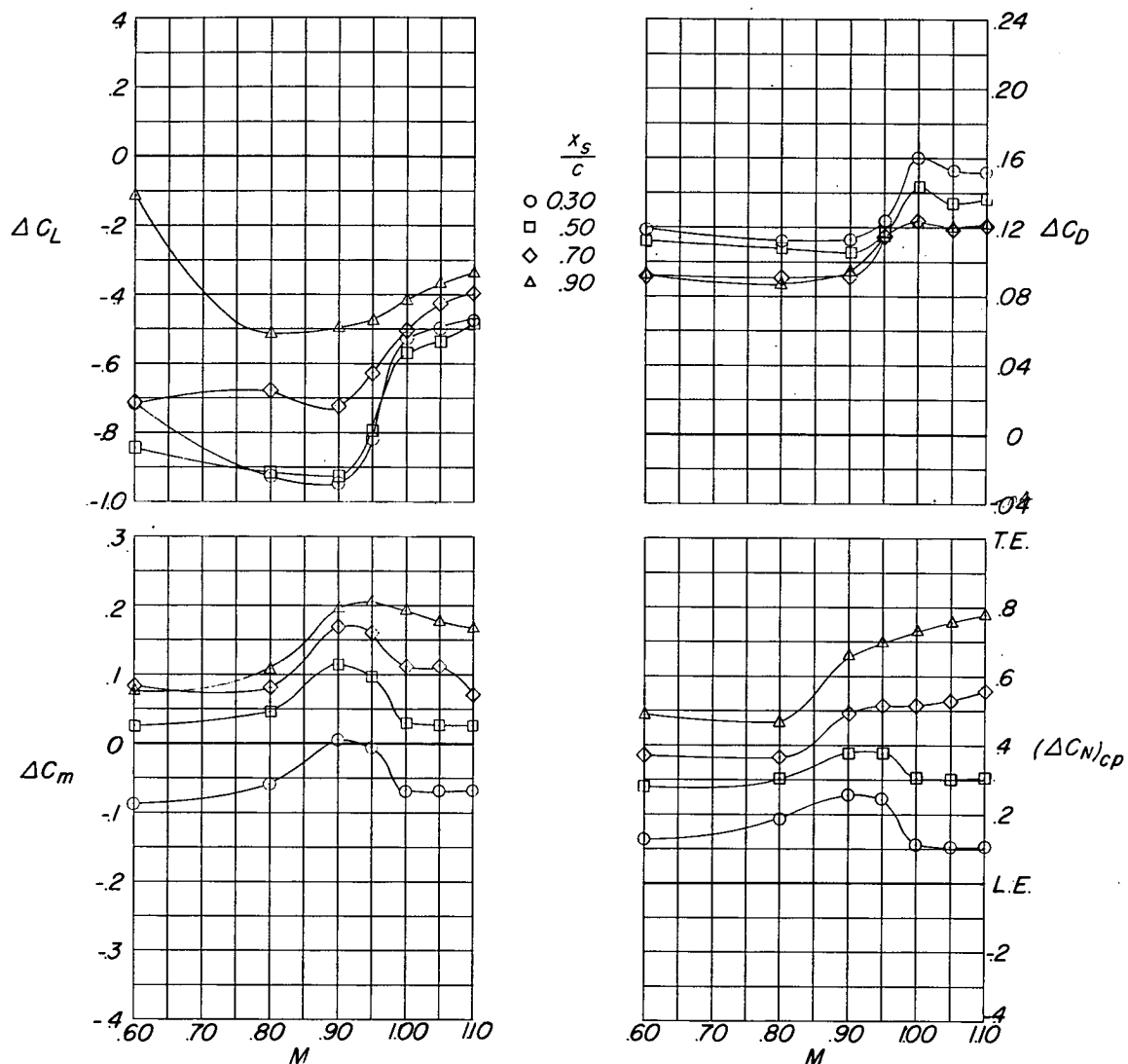
(a) $\alpha = 0^\circ$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 6.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with Mach number for the aspect-ratio-4 model for various chordwise positions of the spoiler-slot-deflector configuration.



(b) $\alpha = 5^\circ$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 6.- Continued.



(c) $\alpha = 7^\circ$; $\delta_s = -0.075$; $\frac{\delta_d}{\delta_s} = 0.75$.

Figure 6.- Concluded.

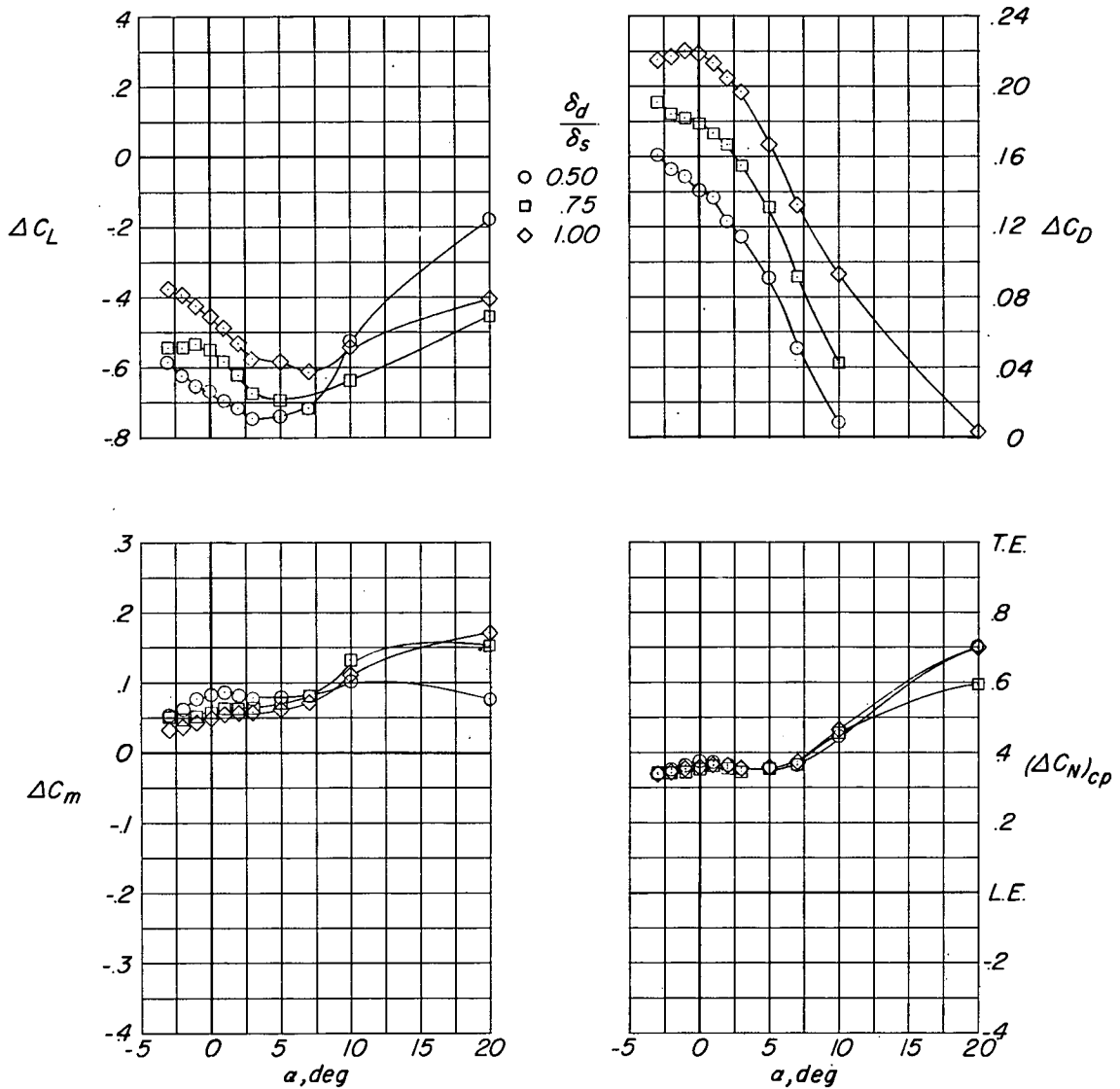
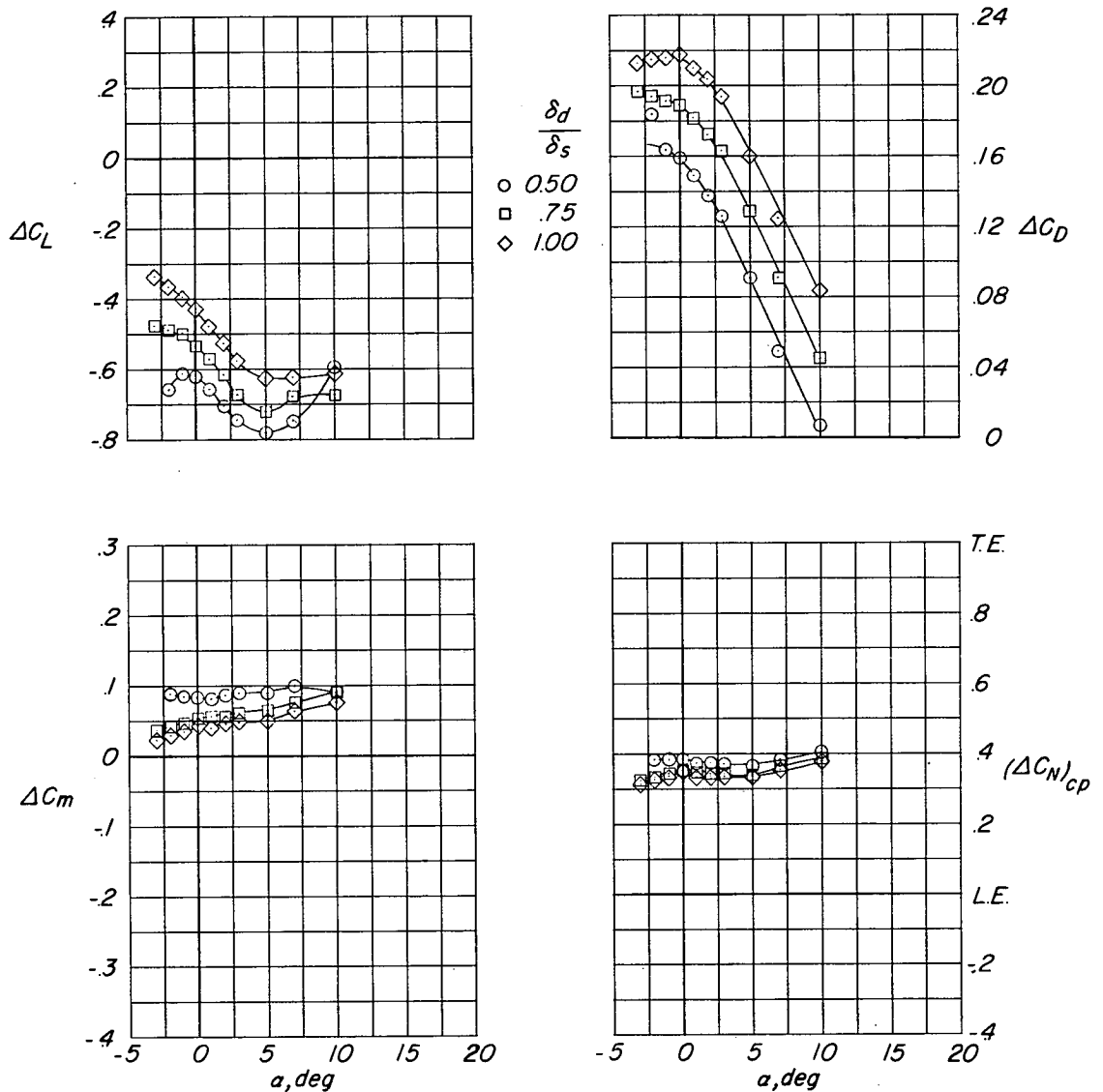
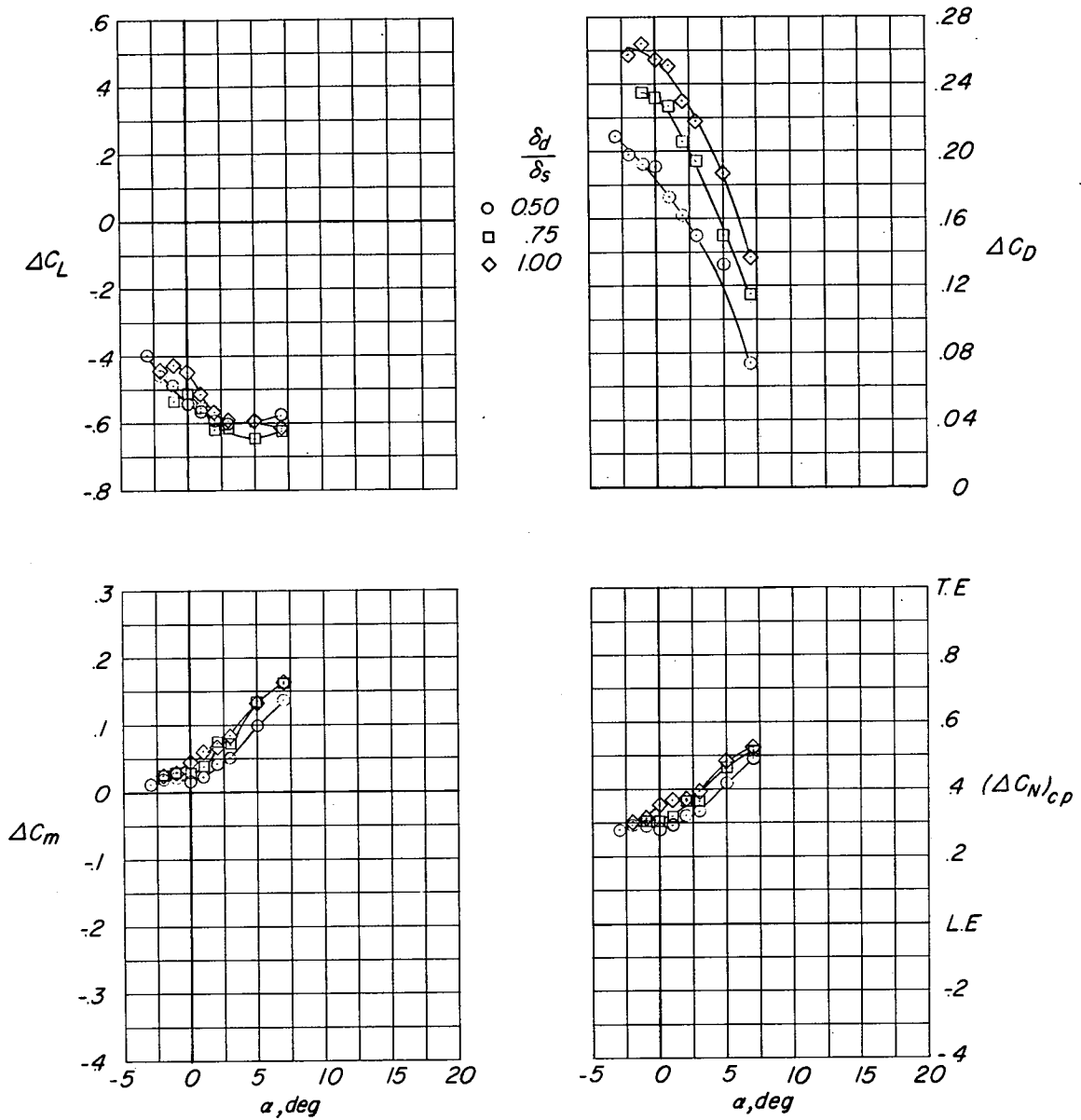
(a) $M = 0.60$; $\delta_s = -0.075$.

Figure 7.- Variation of the incremental lift, drag, and pitching-moment coefficients and center of pressure with angle of attack for the aspect-ratio-4 model having the spoiler-slot-deflector configuration at $x_s/c = 0.70$ and various control projection ratios (δ_d/δ_s).



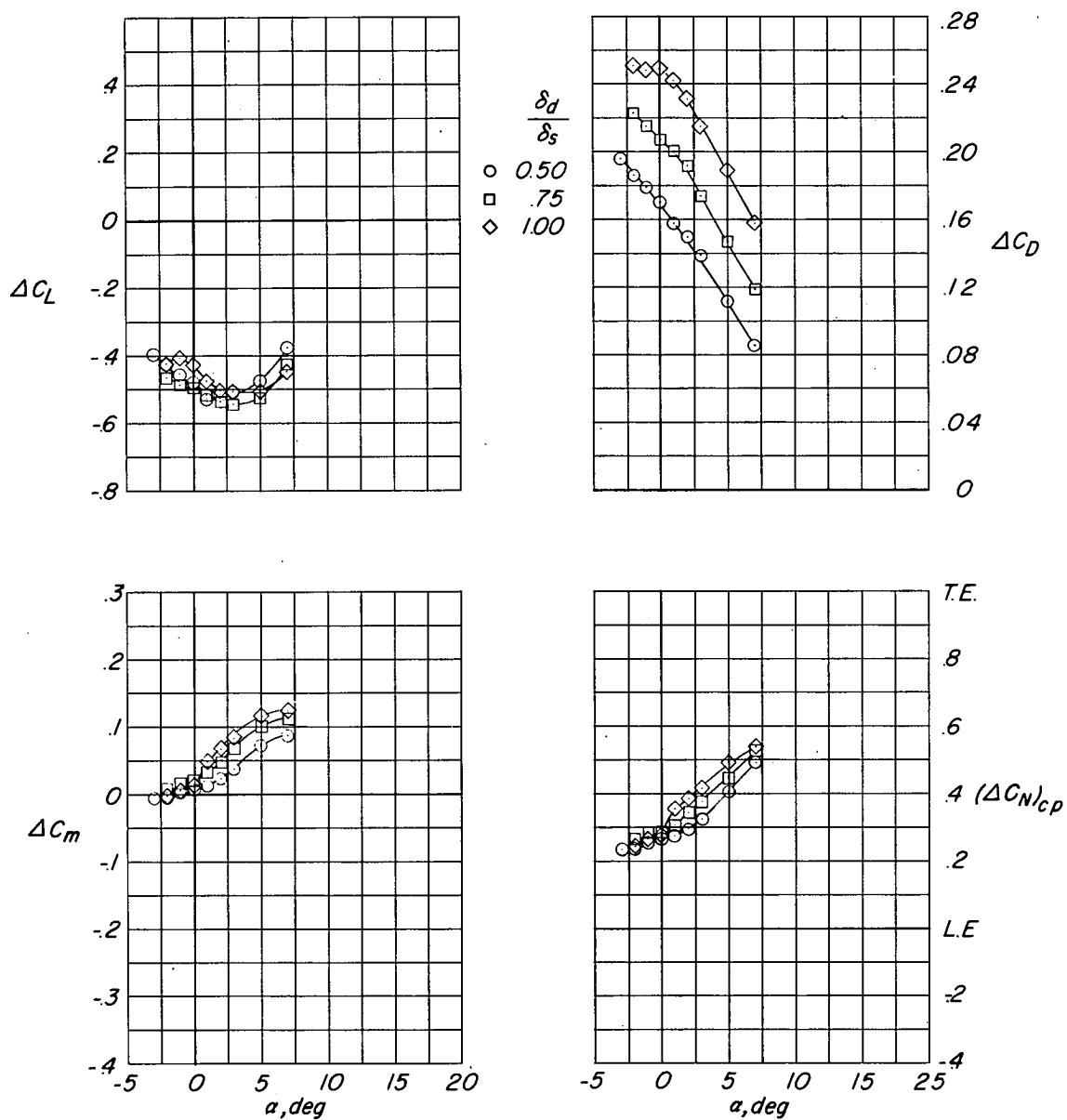
(b) $M = 0.80$; $\delta_s = -0.075$.

Figure 7.- Continued.



(c) $M = 0.95$; $\delta_s = -0.075$.

Figure 7.- Continued.



(d) $M = 1.05$; $\delta_s = -0.075$.

Figure 7.- Concluded.

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